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THE UNIVERSITY OF ALBERTA

THE FREE PLAY SOCIAL INTERACTION OF CHILDREN WITH MENTAL HANDICAPS

BY

SUZANNE T. MULOIN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled THE FREE PLAY SOCIAL INTERACTION OF CHILDREN WITH MENTAL HANDICAPS submitted by SUZANNE T. MULOIN in partial fulfillment of the requirements for the degree of MASTER OF ARTS.

Jane Watkinson
Supervisor

Valerie W. Blakely

Date October 12, 1988.

DEDICATION

"Dreams are made if people only try"

Terry Fox

Dedicated to the memory of my grandfather, Eugène Muloin, who believed in me for who I am and not for what others expect of me.

ABSTRACT

With mainstreaming a reality within the public education system and particularly during recess and lunchtime, it becomes critical to determine what skills and behaviors demonstrated by children with moderate mental handicaps foster successful integration with their nonhandicapped peers. More specifically, what are the behavioral correlates associated with high levels of social interaction? It has been argued that social skills are vital to mainstreaming efforts within the education system but have been, for the most part, overlooked in placement decisions and training (Gresham, 1982).

This investigation involved a field study using nonparticipant observations. It was primarily descriptive in nature with its main purpose being to observe and describe the social interactions of primary school children with moderate mental handicaps within an integrated, outdoor free play environment. The general level of social participation, setting effect, sub-categories of social behavior, and the target of social interactions were the factors examined in the descriptive analyses.

An initial social skills assessment indicated that those children identified as either high or low in social skills in the classroom were the same children observed to be socially active or engaging in little social interaction on the playground, respectively.

Observations obtained using a time sampling procedure indicated that the children in this study predominantly engaged in very little social behavior on the playground. However, when these children did interact with peers, it was, for the most part, positive in nature. Moreover, social activity participation did not appear to be affected by the presence of play apparatus in the environment.

Closer analyses of the most socially active children revealed that 'verbal interaction', while occurring concurrently with other behaviors, was a social skill frequently displayed on the playground by the children in the study. In addition, social behaviors of a

cooperative nature were not engaged in often. Finally, social interaction, for the majority of the time (89.7%), was occurring with other children with mental handicaps from the same classroom.

PREFACE

There is considerable debate in the area of special education over appropriate terminology relating to individuals who are under the umbrella title of 'special needs'. Terms which have been used within the literature include the following: mentally retarded, multihandicapped, mentally disabled, mentally handicapped, intellectually impaired, mentally deficient, and developmentally disabled. The choice of label is primarily based on values and becomes a game of semantics.

This investigation makes use of the term 'mentally handicapped'. This term is used with reservation for lack of a better alternative. It is used throughout this thesis to maintain consistency and preciseness within the literature. Words are symbols which convey meaning. If we fail to understand these symbols, we cannot hope to reach any degree of understanding among ourselves through the sharing of knowledge. Considerable knowledge is gained through the traditional category or classification system which enables people to communicate clearly and easily.

The term 'mentally handicapped' was selected on the basis of the following rationale: "The term *disability* refers to an objective, measurable, organic dysfunction or impairment. . . . A *handicap,* by contrast, is the effect a disability has on an individual's functioning in specific circumstances" (Cartwright, Cartwright, & Ward, 1981, p. 128). Handicaps, then, are situation-specific; that is, they are dependent upon a person's ability to function in specific circumstances. For example, a person in a wheelchair may be handicapped when it comes to using the public transportation system because he or she is unable to walk up and down the steps of the bus and the entrance is not wide enough to access a wheelchair. On the other hand, this person may be a computer programmer and is competent at this job. Being in a wheelchair does not necessarily affect a person's level of performance. There is no correlation between a person's use of a wheelchair for mobility and their ability to competently use the upper extremities of their body or their mental faculties. According to Cartwright et al., therefore, such a person would not be considered handicapped in this specific situation because use of the legs is not a necessary condition for the job.

Nevertheless, despite acknowledging the importance of maintaining clarity and consistency within the literature, 'mentally handicapped', in this writer's opinion, tends to continue to ostracize this group of children into a separate category from the general population. Moreover, it makes these children appear to be 'less' than individuals and tends to make them outcasts of society. In the same vein, the literature distinguishes between 'normally developing' children and children with mental handicaps. This distinction further serves to alienate the latter group of children. In effect, it is counter to the whole integration movement. Rather than becoming an integral part of society, they remain labeled as a distinct group segregated from their peers.

Thus, it should be reiterated that the terms 'mentally handicapped' and 'normally developing' children are used with reservation. The writer sees the subjects of the study as children, first and foremost. Thereafter, these children may have 'different' needs which are variously met. In the final analysis, each child, regardless of specific need, is equally significant in an integrated society.

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TABLE OF CONTENTS

CHAPTER PAGE

I. INTRODUCTION 1
  - Need for the Study 1
  - Statement of the Problem 4
  - Justification of the Study 5
  - Operational Definition of Terms 8
  - Delimitations 10
  - Limitations 10

II. LITERATURE REVIEW 12
  - Normalization 12
  - Integration/Mainstreaming 13
  - Children Classified as Moderately Mentally Handicapped 15
  - Social Competence 17
  - Social Development of Children with Mental Handicaps 18
  - Social Interaction Between Handicapped and Nonhandicapped Children in Integrated Settings 22
  - Social Play 33
  - Assessment 36
  - Summary 39

III. METHODS AND PROCEDURES 41
  - Introduction 41
  - General Research Design 41
  - Procedures for Data Collection 44

Recording Procedures 45
Reliability 47
Study One..51
    Population and Sample 52
    Physical Setting..52
    Time Sampling..53
    Observers..54
    Instrumentation 55
    Treatment of Data..56
Study Two 57
    Population and Sample 58
    Physical Setting..58
    Event Sampling..58
    Observers..59
    Instrumentation 60
    Treatment of Data..61
Validity of Research Project 61
IV. RESULTS..66
Study One..66
    Social Assessment..67
    Description of General Level of Social Interaction 68
    Playgrounds with and without Equipment..70
    Relationship Between Social Assessment and Level of Positive Social Interaction on the Playground..70
    Handicapped vs Nonhandicapped 73

Study Two 75
Description of Sub-categories of Social Behavior 76
Handicapped vs Nonhandicapped 77
V. DISCUSSION 79
The Relationship Between Social Competence in the Classroom and Social Behavior on the Playground 79
The Social Behavior of Children with Moderate Mental Handicaps on an Integrated Playground 82
Teacher Interaction 86
Playground Apparatus 87
Specific Social Behaviors of Interaction 91
Negative Social Interaction 93
Cooperative Behaviors 94
Target of Social Interactions 95
Application to Other Settings 96
VI. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS 98
Summary and Conclusions 98
Recommendations 99
REFERENCES 104
APPENDIX A: School Visitations 115
APPENDIX B: Data Collection Forms 121
APPENDIX C: Definitions of Social Behavior Categories 128

LIST OF TABLES

Table 1 Interobserver Agreement Scores for Study 1 50

Table 2 Interobserver Agreement Scores for Study 2 50

Table 3 Subject Profile 52

Table 4 Social Assessment Scores (ACCEPTS) of Children with Moderate Mental Handicaps 68

Table 5 Distribution of General Social Interaction Behaviors 69

Table 6 Comparison Between Type of Playground and Percentage of Play Time in Positive Social Interaction 70

Table 7 Correlation Between Social Assessment and Positive Social Interaction on the Playground 71

Table 8 Comparison Between Mean Group Assessment Scores and Positive Social Behavior on the Playground 73

Table 9 Comparison Between High and Low Social Assessment Groups and Time Spent in Positive Social Interaction with Nonhandicapped Peers 75

LIST OF FIGURES

Figure 1 Distribution of General Social Interaction Behaviors....................69

Figure 2 Box and Whisker Representation of the Comparison Between Social Assessment Groups and Social Interaction on the Playground....................72

Figure 3 Box and Whisker Representation of the Percentage of Positive Social Interaction Time Spent with Handicapped and Nonhandicapped Peers....................74

Figure 4 Distribution of Sub-categories of Social Behavior....................77

Figure 5 Percentage of Positive Social Interactions with Handicapped and Nonhandicapped Peers During Free Play....................78

CHAPTER I

INTRODUCTION

Need for the Study

In the last decade, there has been a general move toward community living for all individuals, including those with physical disabilities and mental handicaps who have previously been isolated within segregated institutions. Consequently, our traditional values and method of service delivery have been challenged. These challenges have primarily evolved out of the principle of normalization or what is more recently referred to as "social role valorization" (Wolfensberger, 1983). Wolfensberger (1972) presented the concept of normalization to the people of North America based upon the ideologies and practices he had observed in various Scandinavian countries. The concept of integration emanated from the principle of normalization. During the last decade, 'integration' has become a "buzz word" within the field of recreation while mainstreaming has been used to denote a similar process within the education system (Lord, 1983, p. 4). The processes of integration and mainstreaming represent a growing trend to assist all individuals in becoming a part of the 'mainstream' of society.

With the growing interest in normalization, individuals with physical disabilities and mental handicaps are becoming more and more visible within the general community. Services are being provided within generic programs and children with 'special needs' are regularly integrated into preschool programs and public school classrooms. With the focus on deinstitutionalization, adults with disabilities are moving into community based group homes and finding employment within the community. Since these individuals are more in contact with the general public, this movement has placed increased emphasis on the importance of the social skills of these mainstreamed individuals (Brody & Stoneman, 1977). Wolfensberger (1972), while clarifying the concept of integration, explains that, "ultimately, integration is only meaningful if it is social integration; i.e. if it involves social interaction and acceptance, and not merely physical presence" (p. 48). Yet, according to Coyne (1980), there is increasing evidence that individuals with disabilities will not necessarily develop social skills simply by being provided with the opportunity to interact. Hence, placing individuals in integrated settings does not ensure that social interaction will occur.

The importance of social skills to the overall development of the child has been a recent trend noted in the literature. The ability to socially interact with others is considered to be a critical prerequisite to much of a child's behavior maturity. It has been claimed that without an understanding of social behaviors, children may be unable to become competent and adjusted members of their society (Fischer, Hand, Watson, Van Parys, & Tucker, 1984). Consequently, the concept of social competence has become an issue in research dealing with the mainstreaming of children into regular classroom situations. The ability to initiate and respond to positive social interaction seems to be a basic prerequisite to success in an integrated program.

The fields of physical education and recreation have been strong supporters of the process of integration (Watkinson, 1987). Community programs have been established to meet the needs and interests of those individuals with mental handicaps and physical disabilities. However, according to Watkinson (1987), the majority of research focusing on the social interaction and acceptance of individuals with mental handicaps and physical disabilities within integrated programs has been conducted within the classroom and preschool play programs. Few studies have been conducted within programs which are specifically focused on physical activity. Yet, students with disabilities are increasingly being mainstreamed into physical education within the regular school system across the country (Watkinson & Bentz, 1985). Furthermore, these children are presently being integrated with their nonhandicapped peers during recess and lunch times (Watkinson & Muloin, 1988). Community recreation agencies are also offering integrated activities to persons with 'special needs' within their generic programs. Increasingly, the process of integration has been included in municipal agencies' policy and mandates.

There are a growing number of research articles being published that investigate integration within physical activity settings. Physical ability may affect the degree of social interaction occurring in integrated physical activity programs. According to Schmid (1987), the existing literature confirms that physical activity is critical to a child's overall development, physically, socially and cognitively: "Physical fitness is important in all aspects of every child's development" (p. 79). Yet, the importance of motor skills has been neglected in the literature. Consequently, the two primary objectives of any integrated program involving physical activity should be an increase in socialization as well as in activity participation (Titus & Watkinson, 1987). In essence, as Schmid further notes, "if children or adults do not participate in physical activity, not only may their health suffer but their quality of life as well" (p. 79).

It is important, then, that researchers investigate social interactions in physical activity to determine their nature, and to investigate what behaviors contribute to positive social interactions in integrated free play settings. This study was conducted on the playgrounds of schools located within the city of Edmonton and in the surrounding areas to address these issues. The children who participated in this study attended segregated classrooms in a regular school environment.

It was assumed that being isolated from their nonhandicapped peers would affect the level of social interaction of these children. Generally, recess and lunchtime periods are important times of the day for these children because they offer the only opportunity during the school day for these segregated children to freely interact with their nonhandicapped peers. These times represent an unstructured integrated free play setting for observing the natural social exchanges occurring between these children and their peers. The study was designed to identify the repertoire of social behaviors found within such a setting and to investigate their relationship to successful social interaction in vigorous play settings.

Statement of the Problem

This study is part of a larger research project funded by the Canadian Fitness and Lifestyle Research Institute. The purpose of this larger investigation was to determine the relationship between motor competence and the levels of physical activity and social participation in integrated physical activity settings. However, the primary purpose of this descriptive study was to observe the social interactions of primary school children classified as moderately mentally handicapped in an integrated outdoor free play setting. This central purpose can be defined under three general sub-problems which will serve to guide the interpretation of the data collected. Specifically, they are as follows:

1. To examine the relationship between social competence in the classroom and social behavior on the playground.
2. To examine the social behaviors, including positive and negative, that are demonstrated by those children with moderate mental handicaps in an integrated outdoor free play setting.
3. To examine which group of peers (i.e., 'handicapped' or 'nonhandicapped') these children interact with to a greater extent.

Justification of the Study

The concepts of integration and mainstreaming carry different meanings for different people and, as a result, have been subjected to much interpretation and debate. Subsequently, this has resulted in a barrage of research being carried out on the process and, more recently, on the outcomes of the integration movement. Findings of these studies generally indicate that, despite the 'apparent' progress in integrating individuals with disabilities into the community, there is not consistent support of any presumed positive benefits of integration. These benefits include an increase in social interaction skills on the part of those individuals being mainstreamed into the regular setting.

Gresham (1982) proposes that the mainstreaming of children with mental handicaps into regular classrooms has been based on faulty assumptions. Subsequent to a review of the literature , Gresham related that "handicapped children have been placed into regular classrooms without the requisite social skills crucial for peer acceptance" (p. 423). He suggested that children's social skills, rather than intellectual or academic competencies, should be of primary concern when they enter into the mainstream environment and "are perhaps the most critical variables in evaluating the social outcomes of mainstreaming" (Gresham, 1983, p. 334). This is further reinforced by Strain and Shores (1983) in the following statement: " . . . we view the lack of instructional attention to social skills as the misguided element in handicapped children's education" (p. 272).

This may also be true in physical activity settings which primarily involve the "interdependence of participants in both cooperative and competitive physical activities" (Watkinson & Titus, 1985, p. 49). In order for integration to be effective in an environment which revolves around the participation of a group of people involved in similar activities, positive social interactions must be experienced by all of the participants. In other words, the display of culturally accepted social skills is crucial to the success of integration in free play settings, particularly gross motor play settings. Low levels of fitness and motor skills may render it difficult for these children to keep at an even pace with their nonhandicapped peers (Titus & Watkinson, 1987). Hence, in such a fast-paced environment, adequate social skills may enable these integrated children to become more easily involved resulting in greater physical activity and improved social and motor competence.

The majority of research on integration has focused on mainstreaming in academic and preschool play programs and not physical activity settings (Watkinson, 1987). However, since the fields of physical education and recreation are committed to the development of social and motor skills through the enhancement of social interactions, free play settings deserve closer attention (Karper & Martinek,1985). Play has long been recognized as an effective medium in the promotion of social interaction, therefore, it seems appropriate to conduct research in such a natural, unstructured setting as playing (Coyne, 1980; Honig & McCarron, 1987; Wehman, 1977) . Parten's (1932) early study on the social behavior of preschool children during free play has provided a framework for more recent research on the play skills of children with mental handicaps and their relationship to successful social integration (Beckman, 1983; Guralnick, 1986). In a free play environment, the children may feel less inhibited, exhibiting social behaviors that occur spontaneously. Furthermore, as Gresham (1983) notes, "Observations of a child's social behavior in the environment is perhaps the most face-valid method of assessing children's social skills" (p. 333). The importance of the behavior observation lies in its ability to capture the natural expression of behavior without the artificiality of manipulating variables. Observational methods can be used to address both basic research questions and to assist in solving practical problems. It is an effective methodology for establishing the framework for future intervention studies. Consequently, in order to accurately record these social interactions, unobtrusive observation was employed in this study.

As Dunn and Craft (1985) conclude, there is a definite need for further research in the area of integration in settings involving gross-motor activity: "Much of the research for determining the appropriate and best strategies for mainstreaming in physical education has yet to be conducted" (p. 276). This is further supported by Watkinson (1987) in the following statement:

> In summary, while the field of physical education appears to be committed to normalization and integration, this commitment has not been reflected in research that can answer the key questions concerning the motor and social outcomes of integration in physical activity. (p. 19)

Moreover, the few studies that have focused on the social interaction and social acceptance of children with mental handicaps in programs involving physical activity indicate that social interactions do not occur frequently and spontaneously between the children being integrated and their peers.

The acquisition and demonstration of culturally-accepted social behaviors, then, may determine the success of integration within a free play setting. This, in turn, may affect the acceptance of the mainstreamed child by his or her nonhandicapped peers and teachers and his or her subsequent long-term adjustment and success in such an environment. Documented research of the explicit nature of social interactions on the playground may further support the need for more enriched social skill observation, assessment, and training. The knowledge gained from this research may assist in the identification of specific social behaviors that require attention before children with mental handicaps can be successfully integrated into educational or community recreation programs. Without such information, the quality of integrated programs is not likely to improve.

Operational Definition of Terms

To ensure clarity and consistency throughout the study, the following terms warrant further explanation:

1. Normalization: A concept developed by Wolfensberger (1972) based on the philosophy of providing services to individuals with disabilities which are as similar as possible to those experiences offered to the general population. Specifically, it is defined as follows: "Utilization of means which are as culturally normative as possible, in order to establish and/or maintain personal behaviors and characteristics which are as culturally normative as possible" (p. 28).

2. Integration: The process whereby all individuals, regardless of their 'special needs', participate and share in the same experiences as their nondisabled peers (Hutchison & Lord, 1979). It involves more than the physical placement of persons with physical disabilities and/or mental handicaps into community programs. Its primary goal is to create an atmosphere of understanding, social acceptance, and respect of individual differences.

3. Mainstreaming: The placement of children with physical disabilities and/or mental handicaps into regular education settings and programs. This does not necessarily imply that all children will be integrated into a regular classroom. It involves placing children into the "least restrictive environment" based upon individual needs (Cartwright et al., 1981). For some, this could mean a segregated classroom within the public school system. Hence, mainstreaming involves a continuum of placement choices.

4. Moderately Mentally Handicapped: According to the American Psychiatric Association (1987), this classification includes those individuals with an IQ ranging from 35 to 55 who are capable of basic self-help skills. This group constitutes approximately 10% of the population of people with mental handicaps. These individuals can achieve a certain degree of independence however, it is expected that they will always require some degree of assistance (MacMillan, 1982).

5. Social Competence: This is a global term incorporating social behaviors that are culturally-accepted. It involves the ability to initiate and respond, maintain, and terminate social interactions in interpersonal relations. Social competence, then, is a display of appropriate social behaviors occurring within a sociocultural context.

6. Social Interaction Skills: This refers to the ability to initiate and respond to verbal and nonverbal communications in a culturally accepted manner. This term can be further divided into the following three areas: (1) The ability to initiate and

maintain positive social relationships with others. (2) The ability to gain more opportunities to enhance peer acceptance which can lead to successful social adjustment. (3) The ability to cope effectively with and adapt to the social environment (Walker, McConnell, Holmes, Todis, Walker, & Golden, 1983). Social skills, then, are a major determinant of social competence and adjustment.

7. Free Play: Spontaneous recreation or play involving physical activity in which individuals are free to do what they choose in an unstructured environment.

Delimitations

This study was conducted on the playgrounds of elementary schools in the Edmonton area. It involved the observation of the social behaviors of children classified as moderately mentally handicapped. This classification was based upon standardized intelligence tests and was further determined by the school board through its choice of placement. The children, aged 6 to10 years, were from intact segregated classrooms in regular schools. It was conducted during the winter months of January to March.

Limitations

The participants of this study were chosen from intact classrooms and, therefore, random selection or assignment was not feasible. However, the descriptive data on the subjects which is presented in Chapter III lend support to the assumption that these children are representative of students classified as moderately mentally handicapped in segregated classrooms in public schools. Furthermore, the sample of intact classrooms was selected from lists of all such classrooms in the city of Edmonton.

Within some school settings, the children were directed to a designated area of the playground and were not given permission to leave this area for the length of the recess or lunch period. This may have resticted the social play behavior of these children.

In addition, the checklist format used to record the subjects' behavior is designed to represent categories and sub-categories of social behavior which might occur in a free play setting and, as such, may not be generalizable to other social behaviors occurring in a different environment (e.g., home, work, or classroom).

Also, one of the goals was to determine which group of children each target child was interacting with. However, the observers, at times, were unable to identify which children on the playground were handicapped and which were nonhandicapped. After approximately two weeks of observations during the data collection period, this was no longer a limitation. To eliminate any assumptions on the part of the observers, if an observer was not certain of who the children were interacting with, this information was omitted from the observation records.

One final limitation is the effect of the presence of the observers on the behavior of the children under observation. This was minimized by efforts on the part of the observers to remain unobtrusive.

CHAPTER II

LITERATURE REVIEW

For individuals with 'special needs', the 1960's heralded an era of dramatic change in Western ideology with the "Deinstitutionalization Movement" coming into effect (Cartwright et al.,1981). Along with this movement came campaigns against prejudice and discrimination which may be considered a trademark of this turning point. As a result, the consciousness of the country was raised to the needs, problems, and concerns of persons with physical disabilities and mental handicaps. Beginning in the early 1970's a major shift in services took place in the education of, treatment of, and recreation services for, those people with physical disabilities and mental handicaps. This shift in services is best illustrated by examining three interrelated concepts or processes: normalization, mainstreaming, and integration.

This review of literature will examine these processes in addition to several key areas. These areas include: the definition and characteristics of children classified as moderately mentally handicapped; the definition of social competence; the social development, peer relations and social interaction skills of children with mental handicaps; social play; and assessment procedures.

Normalization

The changes which occurred in our value system and hence in services for persons with 'special needs' are largely based upon the principle of normalization, an ideology which was first introduced to the North American culture in the early 1970's. There was a fundamental recognition in the common humanity of all individuals, including the awareness that even persons who are severely disabled and/or handicapped have potentials which can, and should be maximized. This premise is elaborated upon by Bercovici (1983) who noted that: "[Normalization] requires that they be allowed to live and develop under conditions that are as culturally normal as possible, and that they be accorded the rights and dignities expected by any other citizen" (p. 4).

Wolf Wolfensberger, author of The Principle of Normalization in Human Services (1972), is considered by many to be the originator of the concept. Wolfensberger initially defined normalization as the: "Utilization of means which are as culturally normative as possible, in order to establish and/or maintain personal behaviors and characteristics which are as culturally normative as possible" (p. 28). However, since this original definition, Wolfensberger (1983) has refined the principle and renamed it to "social role valorization". This reformulization is primarily based upon the basic premise of the principle itself: ". . . the most explicit and highest goal of normalization must be the creation, support, and defense of valued social roles [italics added] for people who are at risk of social devaluation" (p. 234).

The principle has been effective in enhancing the integration of persons with physical disabilities and mental handicaps into the community. It serves as a guiding principle in promoting the mainstreaming of students with a variety of disabilities and handicaps into the public education system.

Integration/Mainstreaming

The concept of integration evolved out of the principle of normalization. It is a term generally used in association with community-based programs. Essentially, integration refers to the physical and social participation of any individual, regardless of 'special needs', within generic recreation and community-based activities. It denotes a process whereby an individual draws from a continuum of services related to that individual's needs, abilities, and interests. It is not an end in itself but rather a means "whereby individuals participate and enjoy experiences similar to their non-disabled peers" (Hutchison & Lord, 1979, p. 32). The focus is on a continuum framework which is incremental and relevant. This enables individuals to participate and progress at their own stage and rate of development. The success of this process, however, can only be achieved within the context of increased knowledge, skills, and awareness on the part of both the handicapped and nonhandicapped participants.

Likewise, 'mainstreaming' refers to a similar process of integration within the educational system. First appearing in the literature in 1962, it gained increased recognition with the enactment of United States Public Law 94-142 (Biklen, 1985). This law, which came into effect in 1975, mandates comprehensive plans to ensure a free and appropriate education for all persons with physical disabilities and mental handicaps in a manner consistent with the doctrine of "least restrictive alternative" (Horne, 1979, p. 61). As a result, children are being placed into classrooms suited to their individual needs. Efforts to mainstream children have been most prominent and successful at the preschool level with children with mild mental handicaps (Guralnick, 1978). The effort, however, to mainstream children with more moderate to severe handicaps has been minimal (Fredericks, Baldwin, Grove, Moore, Riggs, & Lyons, 1978). These children generally remain in segregated classrooms often within a regular school. This process, therefore, also works on a continuum from segregated classrooms to complete mainstreaming into regular classrooms depending on the nature of the handicap and needs of the child. Similar programs, however without benefit of law except in Ontario, have been enacted within the Canadian educational system (Anthony, 1985).

One of the major assumptions underlying the support for integrated programs is the strong belief that within such a setting, positive social interactions between handicapped and nonhandicapped children will be enhanced (Bricker, 1978; Wolfensberger, 1972). However, observational studies in integrated classrooms reveal that, in the absence of systematic interventions, social interaction and acceptance will not necessarily occur (Gresham, 1982, 84). Notwithstanding this, there has been little evidence of active rejection (as opposed to sociometric rejection) of the children being mainstreamed with their regular peers (Guralnick, 1980).

There are several orientations taken to the study of mainstreaming within the educational setting. Some of the areas covered include: classroom organization, cooperative learning strategies, intervention programs, the use of play materials, sociometric instruments, behavior modification techniques, instructional delivery systems, and other environmental factors. However, according to Dunlop, Stoneman, and Cantrell (1980), a focus on children's social growth and competence "has characterized the effort to mainstream exceptional children into regular classrooms from its inception" (p. 132). It has been the main driving force in the literature. While the focus of this descriptive study is on social interaction, it is important to recognize these other areas of concern within the literature. A more systematic approach to investigating these factors is needed and this is dependent upon researchers making a concerted effort to recognize and acknowledge the many factors influencing the process of mainstreaming.

Children Classified as Moderately Mentally Handicapped

> If there has been a revolution in the field of mental retardation over the past two or three decades, it has been not in the solution of its fundamental problems but in their perception. (Ozolims, 1981, p. vii)

According to the American Psychiatric Association, 'mental retardation', or rather mental handicap, is a term used to describe a person whose intellectual functioning is significantly below average. That is, a person has an IQ of 70 or below (American Psychiatric Association, 1987). This handicap is accompanied by impairments in adaptive functioning with the onset commencing before the age of 18. Recent studies suggest that the prevalence of mental retardation is approximately 1% of the population. Both the American Psychiatric Association and the American Association on Mental Deficiency (AAMD) distinguish among four degrees of severity of intellectual impairment: mild, moderate, severe and profound. IQ levels act as guidelines in differentiating between these classifications.

This study focuses on the second level of "mental retardation", those people with moderate mental handicaps. This particular group constitutes about 6 to 10% of the population of persons with mental handicaps (Cartwright et al., 1981). In addition to an IQ level ranging from a minimum of 35 to a maximum of 55, these individuals frequently have associated physical difficulties which further impede their rate of development (American Psychiatric Association, 1987). Persons with this degree of handicap require supervision and guidance in self help, vocational, academic, and social skills, however they are capable of learning these skills to a semi-independent level. Children assessed under this classification are predominantly educated in special classes within a regular school (Cartwright et al., 1981).

Children who are considered moderately mentally handicapped need intensive training to master skills most of us take for granted. These children characteristically are unable to generalize a skill that has been taught in one setting to another setting in which the skill is required but has not been directly taught (Snell & Renzaglia, 1982). Hence, in order to enable functional mastery of the skill, instruction should take place in the least intrusive and most natural environment. As Snell and Renzaglia (1982) suggest, "whenever possible, skills need to be taught in the environment in which they are most likely to occur" (p. 151-152).

The population of children classified as moderately mentally handicapped has been somewhat neglected in the majority of studies focusing on the effects of integration. It has been previously documented that, if appropriate planning is done, children designated as mildly mentally handicapped can be mainstreamed into classrooms in the public school system with relative success (Sheare, 1974). However, what about those children who are more moderately mentally handicapped? It is clear from the literature that greater emphasis is needed with this group of children to determine the nature of their social interaction skills. This knowledge will assist in facilitating the process of integration for all children, regardless of the severity of handicap.

Social Competence

In order to understand the social development of children with mental handicaps, it is important to first clarify the terminology within the literature used to define the specific behaviors commonly associated with social growth. Social competence and social skills are two such concepts that have been frequently used interchangeably in the literature. This has resulted in a variety of definitions of these two constructs with considerable disagreement as to their correct usage.

Social competence is "a hypothetical construct without a universally accepted meaning" (Csapo, 1982, p. 3), thereby eluding complete definition. It can be generally defined as "the child's ability to affect interpersonal outcomes or goals" (Renshaw & Asher, 1982, p. 392). The ability to establish and maintain adequate interpersonal skills, to display appropriate social skills involved in social interaction with peers, and the ability to adapt to a given situation are important behaviors contributing to social competence.

Social competence, then, is a term used to encompass the many and varied social behaviors described within the literature. Csapo (1982) defines these social behaviors as " a closely interwoven synchronized network of verbal and nonverbal clues used in reciprocal interactions . . . " (p. 3). However, few studies have actually identified the specific social behaviors associated with social competence. These behaviors are learned social skills used in interpersonal situations. According to Michelson, Sugai, Wood, and Kazdin (1983): "The term 'skill' is utilized to indicate that social competence is not a global personality trait but rather a set of learned and acquired behaviors" (p. 2). If we, then, conceptualize social skills as learned behaviors that are goal-oriented, it becomes appropriate to determine how these behaviors normally develop.

In order to understand and enhance our knowledge of the social growth of children with mental handicaps, it is important to first become familiar with and understand the social development of normally developing children. However, despite a large amount of research in this area, the literature is broad lacking in a precise comprehensive theory of social development. Although detailed studies were conducted on the peer relations of young children in the early 1930's, research in this area has remained dormant until recent years. The identification of the specific behaviors associated with social competency and their rate of development, therefore, remains unclear.

Social Development of Children with Mental Handicaps

Research in the area of social skills development has grown considerably in the last decade (LeCroy, 1983). Articles relating to the study of social skills appear in prominent psychological, educational, developmental, and rehabilitation journals. Moreover, it has been estimated that over 75% of recent articles published within the last decade have addressed some aspect of children's social behavior and development (Michelson et al., 1983). Several books have also been written on social skills and their contribution to the healthy growth of children. This research, however, relates specifically to 'normally developing' children (i.e., children without handicaps). In contrast to this growing knowledge, there remains a paucity of research and limited understanding of the social development and peer relations of young children with mental handicaps. Moreover, most of the research that has focused on the social development of these latter children does not define the type or severity of handicap. Rather, these studies refer to children with handicapping conditions or general social deficiencies as if referring to a global, homogeneous group of children.

Children with mental handicaps commonly exhibit relatively generalized social skill deficiencies. In fact, according to Guralnick (1986), these children experience difficulties in every phase of social development. Historically, "mental retardation" has been defined both in terms of below average intelligence and difficulties in social functioning and adaptation which can lead to further adjustment problems in adulthood (American Psychiatric Association, 1987). According to Kelly (1982), ". . . the social functioning of retarded individuals within the mild to moderate range of impairment is a substantial predictor of vocational, interpersonal and independent-living adjustment" (p. 2). Children who lack adequate social skills participate in fewer social interactions resulting in social isolation and/or rejection. Without intervention, these children do not improve spontaneously. Furthermore, deficiencies in social functioning have been associated with low self-esteem, depression, delinquency, and 'bad conduct' discharges from the military (Michelson et al., 1983). On the other hand, social competency in childhood is related to superior academic achievement, effective interpersonal relationships, a successful career, and happiness in later life.

Traditionally, children with mental handicaps are at a disadvantage. These children frequently experience isolated, segregated situations in which the opportunity to freely interact with others has not been made available. They have, for the most part, been taught how to dress and behave in a manner consistent with the norm, secure a job, and live independently in an apartment. Yet, society has frequently neglected to teach these children the social interaction skills needed to initiate and maintain social and personal relationships that will meet their individual needs (Marlett, 1978). Consequently, these individuals are perceived as having failed and are subsequently being blamed by society for their lack of ability to integrate successfully. It remains a circle of defeat for them. As Marlett (1978) relates, " . . . they have few alternatives to loneliness, remain secluded in their apartment, make inappropriate and often misinterpreted advances for friendship, or find a way to return to the training center and accept failure as the price for companionship" (p. 276). Hence, instead of focusing primarily on teaching independent living skills, vocational and academic abilities, perhaps the focus should be on enhancing social competence. Yet, are these skills 'teachable'? Children with mental handicaps experience a range of difficulties in the socialization process which may impede their social interactions with their peers. Adequate social skills, however, can be acquired over time and are influenced by developmental as well as experiential factors. In fact, several studies have documented that these children can learn social skills within a structured environment (Gresham, 1981; Guralnick & Groom, 1987; Johnson & Johnson, 1980; Wasson, 1980). However, without encouragement , appropriate training, and continual monitoring of progress, improvement is not likely to occur. Knowledge of these skills will not be gained within a vacuum. It seems that there is a need, then, to redirect the emphasis from academic competence in the classroom to one of fostering the social competence of mainstreamed children.

Although it is normally assumed that the social development of children with mental handicaps follow along the same developmental processes as normally developing children, little is known about the specific deficiencies involved with these children. Critical questions arising out of the literature include: What skills are prerequisites for social competence? Are these skills situation-specific, part of a developmental process common to all children, or a trait characterizing certain children? Finally, how are these skills taught and/or developed? There is considerable variation in the literature concerning the specific behaviors and/or skills required for a child to be considered socially competent.

Research comparing the development of children with mental handicaps with normally developing children has been through indirect measures. Developmental studies of children who are considered to have inadequately developed peer relations have traditionally been conducted in segregated settings with other children of similar developmental levels. Consequently, research comparing the social development of normally developing children to children with developmental delays or mental handicaps has been, for the most part, achieved by means of comparing separate studies comprised of different sampling populations. These results are questionable in that different sample characteristics, research methods, and environmental conditions may exist in the separate studies. Accordingly, as recent investigators are beginning to realize, studies should be conducted within the framework of an integrated environment with children of normal development who are carefully matched according to developmental level and age. This would enable the researcher to not only determine differences in their patterns of social interaction in relation to chronological age and developmental level, but also to determine ways of improving social interaction skills through the development of appropriate intervention techniques.

In summary, it should be apparent that the specific elements of the social development of children with mental handicaps, as well as with normally developing children, are by no means established. Research raises new questions, the answers to which seem to generate more queries:

> We are far from knowing which behaviors in which situations are most socially effective for which children. Even with this knowledge, the issues of how cognitive social skills interface with behavioral skills and how both of these relate to peer acceptance, remain. These are empirical questions. Their answers lie in more and better research. (Foster, 1983, p. 257)

One factor in particular which has proven to hamper the appropriate development of social skills on the part of children with mental handicaps is the isolated environment in which the majority of these children are raised in the early, critical stages of their development. The absence of opportunities for establishing effective patterns of social exchange with other children may lead to repeated failures to build peer relationships. This can result in overall developmental delays, low self-esteem, and lack of motivation.

Social Interaction Between Handicapped and Nonhandicapped Children in Integrated Settings

> . . . peer interaction is an essential component of the individual child's development. Experience with peers is not a superficial luxury to be enjoyed by some children and not by others, but is a necessity in childhood socialization.

> And among the most sensitive indicators of differences in development are failure by the child to engage in the activities of the peer culture and failure to occupy a relatively comfortable place within it. (Hartup, 1983, p. 220)

The relationship between social competence and peer interaction may have serious implications for the child with a mental handicap. Peer interaction is a reciprocal process, and since children who are less socially skilled elicit fewer social responses from others, this may subsequently result in less social contact (Michelson et al., 1983). Furthermore, in the absence of sustained and successful interactions with peers, children are developmentally 'at risk' because, as Wasson (1980) points out, much of a child's overall development "unfolds within the context of interactive exchange" (p. 7).

There is not a great deal of research on the peer relations of children with mental handicaps. What is available, however, suggests that the development and characteristics of the peer interactions of children with mental handicaps is similar to those of normally developing children (Guralnick, 1986). However, it is the differences that are most perplexing and compelling:

> Compared to normally developing children at similar developmental levels, delayed children exhibit lower rates of social interaction with their peers, participate to only a limited extent in group play, present an atypical pattern of growth in peer interactions across the preschool period, and are especially deficient in using social behaviors most associated with peer-related social competence. (Guralnick & Groom, 1987, p. 1556)

It is difficult to define these differences in light of the inconclusive research that is currently available. However, there appears to be differences between children with and without mental handicaps in terms of cognitive ability, expressive language and general communication skills, social play levels, motor, and sensory skills (Guralnick, 1986; Kelly, 1982). These are skills needed for the development of effective social interaction behaviors. There is a need, therefore, for more research in helping to establish the different patterns of peer interaction displayed by children with mental handicaps in order to determine where intervention is needed and when is the best time for implementation. Within mainstreamed settings, these differences in peer relations are heightened and this is illustrated in the level of social interaction occurring between handicapped and nonhandicapped children.

The development of social interaction among young children has been considered important in the child development and early childhood literature for many years. The majority of this literature has focused on normal developing children. Increased attention, however, is being directed towards the social growth of children with mental handicaps. It has only been recently that the research has focused on the interactions between handicapped and nonhandicapped children in integrated settings.

Despite a growing body of literature, relatively little is known with regard to the style of interactive behaviors that occur between handicapped and nonhandicapped children in integrated classrooms, especially among older children. However, the available research seems to suggest that nonhandicapped children take on a directive role when interacting with their handicapped peers. More specifically, as Guralnick (1986) explains:

> . . . in the course of interactions, they adjust the syntactic, semantic, functional *and discourse characteristics of their social-communicative exchanges in a*

> manner that appears to facilitate communication and may even be organized in a way that can promote the handicapped child's communicative competence. (p. 126)

The social integration that may be occurring between nonhandicapped children and their handicapped peers may not, in fact, be gains in peer-related social interaction affording equal status, but rather the development of an adult-child exchange. Consequently, the style with which nonhandicapped children interact with their peers with handicaps may differ from the style with which they interact with other normally developing peers. The following question may then be raised: Is the social interaction occurring between handicapped and nonhandicapped children in mainstreamed classrooms, then, truly valued peer-peer interactions or merely tolerance on the part of the nonhandicapped child? The answer to this question is critical to the social development of children with mental handicaps and to the success of the integrated setting.

There is considerable evidence in the literature to suggest that mainstreamed settings are more conducive to the development of social interaction skills (Brinker, 1985; Dunlop et al., 1980; Wilton & Densem, 1977). For example, in a study conducted by Beckman and Kohl (1987) the social behavior of the same group of preschool children with mental handicaps in both segregated and integrated settings were compared. Results clearly favoured integrated settings for stimulating greater social interaction. In fact, "More positive interaction took place in the integrated setting than in the segregated setting" (p. 8). Moreover, the children in both groups engaged in significantly more positive social interaction in the integrated setting with a steady increase being observed over time for the children with handicaps in the integrated setting. An increase in the rate of social interaction, however, does not necessarily imply that the children with mental handicaps are interacting with their nonhandicapped peers.

Although these findings are encouraging, it is important to recognize that these studies have produced mixed results. While there have been a number of investigations reporting the lack of acceptance and interaction occurring in integrated settings (Cavallaro & Porter, 1980; Guinagh, 1980; Guralnick & Groom, 1987; Ispa, 1981; Kohl & Beckman, 1984; Taylor, Asher, & Williams, 1987), other researchers have reported opposite findings (Dunlop et al., 1980; Peterson & Haralick, 1977). As Johnson and Johnson (1980) relate: "In order for peer relationships to be constructive influences . . . they must promote feelings of belonging, acceptance, support, and caring as opposed to feelings of rejection, abandonment, and alienation" (p. 91). The more these mainstreamed children are accepted by their classmates, then, the more likely it is that positive social interaction will occur resulting in increased social competence and acceptance.

These disparate findings are somewhat a result of the variety of methodological procedures adopted by different researchers. For example, while some studies have relied on sociometric techniques administered once over a short period of time (Goodman, Gottlieb & Harrison, 1972; Sheare, 1974), others have used observational procedures (Brinker & Thorpe, 1986; Cole, Meyer, Vandercook, & McQuarter, 1986; Ispa, 1981). While making important contributions to the literature, these different research methods have hampered the development of a comprehensive understanding of the social interaction occurring within integrated classrooms by limiting the generality of the findings. It is difficult to compare findings of studies using different methodological procedures.

Despite these methodological inconsistencies, however, there have been some salient findings in the research to date. Numerous studies have indicated that mainstreamed children with mental handicaps engage in very little social interaction with their nonhandicapped peers--even within settings involving free play where the probability of such contact is believed to be much greater (Beckman, 1983; Guralnick & Groom, 1987). For example, Beckman and Kohl (1987) compared the social behavior of handicapped and nonhandicapped integrated preschool children by means of a time sampling procedure. Results indicated that children without handicaps engaged in significantly more positive interaction than did the children with handicaps. These group differences were present regardless of setting and continued over time. Furthermore, recent investigations have indicated that children with mental handicaps are not being regularly selected as playmates by their nonhandicapped peers (Guralnick & Groom, 1987). This finding has been interpreted as being due to the lack of social interaction skills on the part of the children with mental handicaps. Once children become established into groups of friends, more complex interaction skills, which may be above the skill level of these children, are essential.

As a result of these findings, several researchers have investigated possible strategies to increase positive social interaction within mainstreamed classrooms. These strategies include inservice teacher training, preparing handicapped and nonhandicapped students, using peers as tutors, and promoting social interaction through the use of cooperative games (Chennault, 1967; McGill, 1984; Salend, 1984). However, it appears that the use of nonhandicapped peers has the greatest impact on the development of social skills of their handicapped peers in facilitating social interaction: "The utilization of children as agents in their own socialization should be a key consideration in planning many different kinds of early intervention activities, particularly those activities that involve the integration of handicapped and nonhandicapped children" (Hartup, 1978, p. 48).

According to Grigg (1983), there are four strategies of peer-mediated intervention that are designed to facilitate the development and maintenance of social behavior on the part of the mainstreamed child. These include the following: (1) prompting and reinforcement of nonhandicapped peers by teachers; (2) peers acting as agents of reinforcement; (3) peers initiating social interaction; and (4) peer modeling. Research findings have indicated success in the implementation of these strategies (Morris & Dolker, 1974).

One of the many questions of continual debate arising out of the literature involves the mainstreaming of children on the basis of either developmental or chronological age. Consequently, there is a growing number of studies comparing children at different developmental and chronological age levels within integrated settings. For example, Guralnick (1980) in an attempt to delineate the nature and extent of social interactions among preschool children at different developmental levels, observed the interaction occurring between four groups of children (mildly, moderately, severely handicapped, and nonhandicapped) during free play within the classroom. The analyses of the interactions revealed the following patterns: (a) Nonhandicapped and mildly handicapped children interacted more frequently with each other than expected and less frequently than expected with children with moderate and severe mental handicaps. (b) Children with moderate and severe mental handicaps interacted with all four developmental groups on an equal basis as expected. (c) These differences were enhanced over time. However, it is important to note that the children with mild mental handicaps were older than the nonhandicapped children by approximately one year and this age difference could account for the interaction occurring between the nonhandicapped and mildly handicapped children. In other words, these children may have been closer in developmental level.

Other studies indicate that chronological age has an impact on the pattern of social interactions occurring within mainstreamed educational settings. Guralnick and Groom (1987) observed that children with mild handicaps preferred to interact with children who were of the same chronological age level and did manage to interact and engage in more advanced levels of social play with this group.

It has been determined, therefore, that social interaction is minimal between handicapped and nonhandicapped children in mainstreamed settings. However, there is very little information available on the nature of the social interaction patterns that do occur between these children (Guralnick & Groom, 1987). What, in effect, are the types of behaviors displayed by children with mental handicaps? And, how do these social behaviors differ from their nonhandicapped peers? Furthermore, what social skills are necessary to promote social interaction? In order to delineate the specific social behaviors that comprise social interaction, researchers must become concerned with what behaviors are associated with high rates of social interaction. Identifying these behaviors, it would seem, may assist educators in facilitating social interaction between children with handicaps and their nonhandicapped peers. Based on a recognition of this need, Beckman (1983) conducted a study "to identify patterns of interaction between handicapped and nonhandicapped children in an integrated preschool and to identify behavioral correlates of some of those patterns of interaction" (p. 70). The study involved two private preschools comprised of 31 nonhandicapped and three handicapped children in one classroom and 69 handicapped and seven nonhandicapped children in the other classroom. This investigation also involved the use of children of different chronological age and developmental levels. Twelve target children, three from each of the four developmental groups, were selected to be observed. Specifically, these four groups were comprised of the following: nonhandicapped 4-year-olds (NH4), nonhandicapped 3-year-olds (NH3), moderately handicapped (MH), and severely handicapped children (SH). All observations were conducted during a morning free play session within the classroom. Observations involved two parts: For the first part, observers recorded in a continuous manner all behaviors that the target child either received or directed towards other children in the classroom. The behaviors were classified as either positive, negative, or neutral. The behaviors were also recorded as initiated or in response to the behavior of a classmate. The duration of specific behaviors were not recorded. The second part of the observations involved a time sampling procedure to record whether the child was engaged in solitary, parallel, or associative play. These categories were modified from Parten's (1932) categories of social play. In addition, observers recorded the occurrence of 18 specific social behaviors on a behavioral checklist which was later used to delineate specific behaviors that were associated with high rates of social interaction.

The findings of this study support previous research which contend that when no attempts are made to promote interaction, nonhandicapped children do not frequently interact with their handicapped peers: "Nonhandicapped children demonstrated a clear preference for other nonhandicapped children who were of the same chronological age" (p. 75). Beckman's interpretation of these findings suggest that the children with handicaps do not engage in the types of behaviors that might elicit interaction from nonhandicapped peers. According to Beckman, the behaviors that were most frequently associated with high levels of social interaction involved the most sophisticated and complex behavioral networks such as smiling, laughing, talking, shouting, walking, running, and climbing. These behaviors were observed most frequently by the nonhandicapped 4-year-old group, followed by the nonhandicapped 3-year-olds, then the moderately handicapped group, and finally the severely handicapped group. On the other hand, other less complex behaviors which were not associated with high rates of social interaction were observed most frequently in children with moderate and severe mental handicaps. These behaviors included: sitting, standing, mouthing objects, engaging in "assisted movement", and vocalizations (p. 75). These types of behaviors, as Beckman suggests, "may be less likely to attract and hold the attention of other children in the classroom" (p. 75). Moreover, the interaction of children with handicaps tended to involve less reciprocity and behavioral chains than that of their nonhandicapped peers, further limiting social interaction.

This study, then, represents one of the few systematic attempts at delineating specific behaviors required for successful social interaction between handicapped and nonhandicapped groups of children in integrated settings. As Dunlop et al. (1980) point out: "Little specific attention seems to have been paid to the role of children's specific behaviors, independent of handicapping condition, in the development of social interaction between handicapped and nonhandicapped children . . . " (p. 133). Researchers need to be focusing, therefore, on a developmental framework identifying specific social behaviors common to a variety of different settings that are associated with high levels of social interaction.

In addition to the existing gaps in knowledge in the literature, it is also important to acknowledge the limitations of the many studies that have already been conducted, some of which were outlined in this review. Most of this research has relied on sociometric instruments and/or observational data involving frequency and duration measures. Sociometric ratings, however, are only useful in determining the current status of the child in the peer group, but they do not provide insight into the types of behaviors whereby status is achieved and maintained. Furthermore, the majority of the research is based upon correlational measures comparing the general level of social interaction of children with mental handicaps with their nonhandicapped peers. However, the assessment of more specific social responses, especially in complex social situations, may prove valuable in delineating interaction skills related to effective peer relations with other children. Specifically, behaviors related to high social interaction based on sequencing patterns of social reciprocity need to be established, but so far have been neglected in research with children. One reason for this, as Csapo (1982) explains, is the "lack of normative data based on representative sampling of children on the rate of development of these skills in young children" (p. 40). There is no normative data indicating the desirable number of friends, normal levels of frequency, duration, and quality of social interaction during various levels of development. There is still a gap, therefore, that exists between this rapidly growing body of research findings and the incorporation of these findings into comprehensive intervention programs and social service delivery systems (LeCroy, 1983).

Finally, the majority of the studies reviewed in this section frequently made use of an artificially mainstreamed setting recruiting children "for placement in the integrated classrooms through newspaper advertising, special posters, and word-of-mouth" (Jenkins, Speltz, & Odom, 1985, p. 9). As a result, the children entered a new and unfamiliar situation and, as previously documented, children with mental handicaps do not perform as well in new situations. It appears that little research has been conducted in classrooms already mainstreamed. However, what is most important is the effect of integration in current situations. This type of information is needed to further identify specific social behaviors critical to successful social interaction. Moreover, many of these studies also involved 'reverse integration', frequently matching children of different age groups (Jenkins et al., 1985) and unequal numbers of children with and without handicaps Beckman & Kohl, 1987; Dunlop et al., 1980; Field, Roseman, DeStefano, & Koewler III, 1981). Researchers, then, need to take these considerations into account when studying the nature of social interaction within integrated settings.

In summary, research in the area of social interaction in mainstreamed classrooms indicates that little social interaction does, in fact, occur within integrated settings between children with mental handicaps and their normally developing peers. The nature and extent of the interactions that do occur remain to be determined by future researchers. There are definite deficiencies in these former children's social skills but where and to what degree remains somewhat unanswered. Differences do exist in the social behavior of children with mental handicaps and their nonhandicapped peers. This distinction primarily involves the large amount of time youngsters with mental handicaps generally spend in isolated activities.

Social Play

In Canadian schools, children who are classified as moderately mentally handicapped are being mainstreamed into the least restrictive educational placement which, for the most part, is a special education (i.e., segregated) class within a regular school. Integration is provided outside the regular academic classroom, most frequently in areas such as physical education, art, music, and extracurricular activities (Watkinson & Muloin, 1988). A common setting, therefore, for integration in the public education system appears to be during recess and lunch hour. It is during these specific times of the day when children from the special education classes can freely interact and play uninhibited with their nonhandicapped peers with minimal supervision. Social play is defined here "as a state of engagement in which the successive, nonliteral behaviors of one partner are contingent on the nonliteral behaviors of the other partner" (Garvey, 1983, p. 235).

The use of play and/or recreation to foster social skill development and act as a facilitator of the integration process has been widely accepted within the literature (Coyne, 1980). Many positive benefits have been observed within an unstructured recreational or 'free play' setting. According to Wehman (1977), " . . . it is generally accepted by child development experts that play is critical in the facilitation of cognitive and social development of normal children" (p. 13). It affords the young child the opportunity to acquire adaptive skills necessary for later adjustment. Children, then, need to play to acquire basic social skills.

> Interestingly, perhaps the most important index of children's social competence with peers is their ability to participate with others in sustained social play. Afterall, to engage in productive play activities, young children must successfully integrate those skills and abilities that allow them to enter and maintain interactions and to resolve conflicts as they occur. (Guralnick, 1986, p. 99)

Yet, on the other hand, it should also be recognized that the ability to socially interact is a prerequisite in order for effective social play to occur: " . . . play appears to emerge in the human repertoire almost completely within the context of peer interaction" (Hartup, 1983, p. 221). Social interaction enhances the likelihood of play behavior occurring. Not only is play important to the overall development of the child, then, but it is also a time to practice one's social and motor skills. It, therefore, affords the opportunity to make friends and gain acceptance by other children. The school playground during periods ot free time offers a unique opportunity to develop these skills:

> An outdoor play environment is a virtual magnet pulling children toward it, an oasis in which a child can explore, practice skills, use imagination, role play, problem solve, and share, as well as develop play abilities. (Jambor & Gargiulo, 1987, p. 18)

At the same time, however, play is more than just a medium for the development and practice of social play skills. It affords enjoyment and satisfaction in a relaxed atmosphere. In fact, this quality is necessary in order for these skills to develop adequately: "For the acquired social play skills to be maintained and generalized, the play experience must be fun and pleasurable" (Li, 1983, p. 90). The qualities of fun and enjoyment will lead to more sustained and satisfying peer relationships.

It has been established, then, that play and social interaction are interdependent. This gives rise to the following questions: If the social interaction skills of children with mental handicaps are deficient, are these children also, therefore, deficient in play skills as well? What, in fact, are the social play skills displayed by children with mental handicaps? Do they have the social interaction skills necessary to play successfully? In a review of the literature, Li (1981) notes that children with mental handicaps prefer more structured material and are less imaginative than their nonhandicapped peers in spontaneous play. Social play of children with mental handicaps, therefore, is believed to be limited and/or delayed when compared to nonhandicapped children of similar chronological age. Moreover, their play is often solitary engaging in more isolated behaviors with the occasional social interaction being directed towards teachers more frequently than towards peers. In fact, according to the findings of a study conducted by Wasson (1980), children with mental handicaps spend approximately 8% of their time being socially interactive in a free play setting. Wasson further compared this percentage to the findings of several studies on the social participation of nonhandicapped children. According to these studies, nonhandicapped children spend approximately 40% of their time in social interaction. Consequently, Li (1981) suggests that these children need to be taught how to play.

Play, then, represents the setting for a natural mainstreamed experience. In light of this observation, it is not surprising that educators have begun to alert teachers to the importance of including structured and unstructured play programs within the classroom curriculum. However, more encouragement still needs to be given to the significant value of the playground in developing and promoting social skills in children. Very little research has been conducted outside of the classroom setting. The knowledge we have is sketchy and fragmented primarily because studies in this area deal with different aspects of play. For example, research on the nature of play behavior of children with mental handicaps at various ages and corresponding levels of functioning is needed. In addition, what are the nature of these differences in play behavior? Is it related to early experiences in the home? Finally, little research exists concerning the assessment and training in specific social play behaviors and their effectiveness. Despite a growing awareness of the importance of social play to the overall development of children, research in this area is still in its infancy.

Assessment

There has been a recent growth in the number and variability of assessment tools available to identify those children with inadequate social abilities who are in need of social skills training. Assessment, then, is concerned with locating targeted behaviors to be remedied by identifying the antecedent and consequent events controlling these behaviors (Csapo, 1982). Information obtained in assessment provides necessary feedback by screening and/or identifying those children with specific social deficiencies. Generally, children with poor social skills will score low on the assessment instrument. From this, specific behaviors can be targeted for training (Michelson et al., 1983). An appropriate intervention strategy is selected on the basis of this procedure: "Initial assessment can determine present knowledge of social skill components and measure the quality of actual social performance in children" (Michelson et al., 1983, p. 13). Moreover, assessment procedures are essential components of any social skills training package because they evaluate on an ongoing basis the effectiveness of the training program. Unfortunately, the majority of social skills training programs do not regularly make use of assessment techniques to ascertain their efficacy.

A variety of assessment instruments have been developed to measure deficiencies in social skills. Primarily, there are three strategies that have been utilized for assessing the social skills of children: behavioral observations, informant reports, and self-reports (Michelson et al., 1983). Some assessment programs make use of a single method of assessment, while others use a combination of two or more of the strategies.

It appears, then, that in establishing the current status of assessment techniques, there is no one approach that is considered to be the "best" method. There are both advantages and disadvantages accompanying all of these techniques resulting in several investigators supporting the use of "multipurpose-multimethod assessment" procedures (Croft, 1983, p. 23).

One 'multimethod' social skills package is "The Walker Social Skills Curriculum: The ACCEPTS Program". It is designed to teach social skills that are essential for successfully adjusting to the behavioral demands of a mainstream setting (Walker et al., 1983). The curriculum contains the following elements: a placement test, step-by-step instructional procedures, teaching guidelines, scripts for teaching 28 social interaction skills, videotaped examples, role play activities, competency tests, various activities designed for different size groups (e.g., one-on-one to large groups of 10 or more students), and behavior management techniques. It is primarily used within an academic setting, although there is a recess rating form to determine the generalization of the targeted child's social participation and social skill level. Free time is given as reinforcement for proper display of social behavior. This comprehensive program,then, incorporates screening, assessment, training, and ongoing evaluation.

Another relevant multicomponent training package is the PEERS Program (Procedures for Establishing Effective Relationship Skills) developed by Hops, Fleischman, Guild, Paine, Walker, and Greenwood (1978). This program is the result of five years of intense research in both special education and regular classroom settings and involves both recess and classroom intervention techniques in addition to a tutoring component, reward system, and a self-report component. Assessment strategies are also incorporated within its procedural framework.

However, both of these well known training packages lack procedures for specific training in natural situations as opposed to the classroom environment. What about generalizing to other situations, especially where social behavior might occur spontaneously as it does during recess and lunch hour? Recess is incorporated within these programs as a time to observe training effects and for reinforcement purposes and not as an opportunity for direct intervention.

Another limitation of assessment and training programs currently available is their failure to consider developmental factors related to social skills. This represents a major gap in our knowledge of children's social behaviors. In order to effectively assess children's level of social skills, it is necessary to first define those behaviors that make a given social interaction successful. As a result, virtually no attention has been given to the interdependencies on which interactions are based. Normative data on large samples of children who are considered socially skilled at various age levels are needed to serve as a standard against which the effectiveness of social skills training programs can be compared.

Summary

In summary, several fundamental points have been identified. First, there is an extensive body of literature in the area of special education. However, it is neither comprehensive nor cohesive. What is necessary, therefore, is not merely more research, but more relevant research which builds on, clarifies, and improves present data.

Second, the "deinstitutionalization movement" resulted in a consciousness which has sought not only to humanize popular attitudes and behaviors, but also to make community services and programs accessible to children with handicaps. Consistent with these developments was the movement to promote integrated settings in which children with handicaps can interact freely with their nonhandicapped peers. However, despite these initial observations, the literature clearly illustrates that integration is not occurring spontaneously within the educational environment, including the school playground. To be successful, these children must be socially integrated, and not simply in physical proximity to their nonhandicapped peers.

To facilitate the process of integration, these children need to acquire specific social skills. This requires research which focuses primarily on identifying the skills which are prerequisites to a high rate of social interaction. From this knowledge and understanding, it becomes possible to design appropriate intervention programs to facilitate peer interaction in an integrated setting. It further enhances the possibility of progressing from simply 'maintaining' these children in integrated settings to one of social acceptance and respect.

In this respect, the present study specifically sought to describe the nature, extent and viability of the social competency skills of children with mental handicaps. This is a necessary first step to understanding the existing situation and areas of concern. Upon identifying the social behaviors displayed by these children and determining which of these behaviors are associated with high levels of social interaction, the development of intervention programs followed by field testing and evaluation can be implemented. In this way, the answers to the many questions posed within the literature can be met with more consistency and understanding.

CHAPTER III

METHODS AND PROCEDURES

Introduction

This chapter outlines a two-stage process that was carried out in this study. These two stages are presented independently of each other as two studies to ensure clarity and consistency of the research. The same research design, procedures for data collection and recording strategy were employed for both studies. Each stage was then divided into the following segments: population and sample, physical setting, time sampling procedures, description of observers and observer training, instrumentation, and treatment of data.

The primary purpose of the research was to describe the social interaction of children with moderate mental handicaps in an integrated free play setting. As noted, the investigation involved two stages, Study One and Study Two. The first study was designed to describe the social interaction in free play of children with moderate mental handicaps and to identify which children in the sample display social interactions in a consistent manner. Data from this stage were compared to the findings of a social assessment questionnaire completed by the teachers of the children. In the second concurrent study, the 10 subjects displaying the most frequent social behavior, whether it be of a positive or negative nature, were selected for closer analyses.

General Research Design

> . . . underlying every science is observation and measurement, providing a description of events and a way of quantifying them so that experimental manipulation may be ordered. The ultimate in science is, of course, an ordering

> of facts into general, consistent laws from which predictions may be made, but it inevitably starts with observations. (Bachrach, 1962, pp. 30-31)

This investigation involved a field study design using nonparticipant observations. Thus, "The observer is a passive entity who merely observes and does not actively participate in any way in the event he or she is studying..." (Agnew & Pyke, 1987, p. 60). As Brandt (1972) suggests, "ordinary behavior tends to prevail when the observer is trusted and blends into the behavior setting" (p. 145). Hence, the primary objective of such a design is to observe, describe, and interpret the target events or behaviors as they occur naturally in their usual surroundings (Agnew & Pyke, 1987). To enable the behavior to occur spontaneously, the observers must remain as unobtrusive as possible. This type of study provides valuable information that, for the most part, cannot be obtained in any other way.

Field research, then, is distinguished from other types of research in that it yields its data from the observation of naturally occurring events: "It is the investigator's task to unravel this real world and identify the behavioral patterns occurring within it" (Brandt, 1981, p. 9). A field setting, as defined by Neale and Liebert (1980), is "an environment or situation that the subject perceives as occurring naturally, so that the variables of interest can be observed or manipulated in an apparently spontaneous way" (p. 16). Brandt (1981) adds that: "Naturalistic field studies . . . have the advantage over other research types of being heuristic, highly realistic, relevant to important social problems, and oriented toward significant theoretical issues" (p. 5). Thus, they focus on describing the ongoing, natural behavior of individual subjects. From this description of social reality, field research then builds its theories of the basic properties of human existence which form the empirical basis for further intervention studies (Johnson, 1975).

In studies using individuals with mental handicaps as research participants, it is evident that the most popular mode of analysis is through standard psychological tests designed to measure specific intellectual, social and/or motor skills, through questionnaires and surveys, as well as through subjective interpretations (Sackett, 1978). It has only been in recent years that field research has become respected in professional literature. Largely overlooked for many years as a valid research method, it has served to bridge the gap between natural and experimental research. Quantitative observational methods can be used to address both basic research questions fundamental to further experimental analysis and to help solve practical problems related to the sample population: "A primary purpose of quantitative observational research is to generate information relevant to describing and identifying adaptive functions in the course of everyday person-environment transactions" (Sackett, 1978, p. 5). This type of research continues to make a lasting impact on basic behavioral research by generating hypotheses. Observational studies, then, can provide objective, descriptive information regarding the natural behavior of the target population of interest. This information, in turn, can be used to further assess and implement intervention procedures based upon the findings obtained.

The primary advantage of an observational study in a natural setting is that it is a more familiar environment for the subjects of interest. This, in turn, enables the observer to record and later examine freely emitted behaviors from the subjects, rather than observing the subjects in an environment that is deliberately structured toward obtaining certain responses. The main disadvantage of naturalistic observation, however, is the need to define distinct behavioral categories. This task is difficult in research dealing with social interactions where there are not always discrete beginnings and ends. Another major limitation, as described by Gottlieb (1978), involves the inability of the observer to record the social context of the target child's behavior:

> A major limitation of observational research is that the observer has little way of knowing the historical context in which ongoing behavior occurs. An initiatory response that seems neutral or positive to an observer may be interpreted very differently by the person to whom it was directed, depending on the past history of interactions between the interactors. (p. 304)

As a result, the obtained data are constrained by time limits and may not represent the actual sequence of behavior that occurred.

There are two general methods used in obtaining observational data, namely event and time sampling (Brandt, 1972). This investigation incorporates both procedures. In the first stage, time sampling is used, while the second stage of this investigation includes both methods.

Procedures for Data Collection

Both stages of this investigation employed the same procedures of collecting data. The subjects were observed during 15 to 40 minutes of free play time on the playgrounds of their respective schools. Each observer recorded behavior three times a week at one to three different schools. Observers were located unobtrusively near the targeted child. A 10 second interval method of recording the behavior sample was employed (Bijou, Peterson & Ault, 1968). To the sound of a prerecorded tone on a cassette tape, children's behaviors were observed and recorded on prepared sheets (see Appendix B). These cassettes had earphones so as not to disrupt the natural behaviors of the children on the playground. Observers recorded the behavior of three to four children in a random order, established by selecting subjects from out of a hat. One minute of observation was recorded for a single child before moving on to the next child on the list. The order of children to be observed by each independent observer was alternated each day.

Recording Procedures

In order to use procedures involving time intervals, a sensory cue is required to indicate to the observer when each time segment begins and ends (Holm, 1978). There are several methods available which include: a stopwatch; a portable, pocket-sized timer that can be set for predetermined intervals; or a buzzing sound, click, or chime prerecorded on a cassette tape (Sulzer-Azaroff & Mayer, 1977). Both Study One and Study Two employed the use of a walkman with earphones so as not to distract the natural sequence of events. As Sulzer-Azaroff and Mayer suggest: "A prerecorded cassette tape with an ear button is ideal for cuing unbiased observation" (p. 69). Moreover, prerecorded sounds, such as the computerized beeps used in this study, free the observer to concentrate on watching for critical events.

According to Brandt (1972), there are three general formats used in the recording of observational data: narrative, checklist and rating. Both stages of this study involved a checklist of action behaviors. Hence, the data recorded was defined by the behaviors listed on the coding sheets:

> Items to notice in a behavioral situation are clearly established ahead of time. They are selected and defined so as to be classified as quickly as they are observed, with a high degree of objectivity. Although the checklist has long

> been used noting static qualities like sex, race, and family membership, it has recently found service in recording action and interaction. (p. 81)

A coded interval recording sheet was used to record several categories of behavior simultaneously. The procedure involved an observer making entries with a pencil on a sheet of paper marked with successive time units. Paper and pencil recording methods have the added advantage of being relatively inexpensive, flexible, mobile, and data can be easily coded and summarized. In addition, several aspects of ongoing behavior can be recorded simultaneously. This procedure can be used in a natural setting because it is unobtrusive:

> Such a device frees the observer from constantly checking the time. It minimizes a major type of error in coding with this technique, namely, the problem of missing time block boundaries when observers must rely on looking at the clock. One advantage of checklist coding is the ease with which data can be coded and summarized, with minimal potential loss of records. (Holm, 1978, p. 102)

The main limitation of observational data using the checklist paper and pencil technique is that the data are confined to the specific aspects of behavior defined in the instrument. Consequently, observer interpretation is minimal which can be both an advantage and a disadvantage. It is difficult in everyday situations to objectively categorize behavior with such a complex array of interactions occurring simultaneously.

Reliability

The use of human observers necessitates the need to measure the consistency of recording (Wall, 1981). In observational studies, as Strain, Cooke, and Apolloni (1976) note, "the only feasible test of reliability is interobserver agreement" (p. 80). This refers to the percent agreement score obtained between two observers who independently record the same behavior of a subject. It reflects the extent to which two or more observers agree on scoring behavior. If the observers consistently demonstrate high agreement scores, it can be generally assumed that the observations accurately reflect the subject's performance (Kazdin, 1977). The basic objective, as noted by Johnson and Bolstad (1973), is "an estimate of the consistency of measurement" (p. 27). In this study, a criterion of 80% agreement was considered satisfactory (Hartmann, 1977; Sulzer-Azaroff & Mayer, 1977).

Reliability rests on the precise operationalization of behavior and the careful training and supervision of the observers. According to Wall (1981), a definition of behavior must meet three basic criteria: objectivity, clarity and completeness. In other words, definitions should specify observable qualities of behavior. Ambiguity should be minimized:

> Lack of agreement may reflect insufficient training of the observers, ambiguous identification of characteristics to be rated or described, indistinguishable or overlapping categories, or observations made at somewhat different moments in time. (Brandt, 1972, p. 141)

Hence, the degree of observer agreement is dependent upon a number of factors which include: specification of definitions of the observation code; complexity of coding instrument; observer training; method of calculating reliability; and frequency of time sampling (Bijou et al., 1968; Bijou, Peterson, Harris, Allen, & Johnston, 1969; Mash & McElwee, 1974).

The method employed for estimating reliability was by means of establishing coefficients of agreements (Sulzer-Azaroff & Mayer, 1977). Specifically, this involved the following formula: (Number of Agreements/Number of Disagreements + Number of Agreements) x 100%. An agreement was defined as any interval in which observers recorded the same behavior. Disagreements involved only one observer reporting that a specific behavior occurred. Thus, every interval that was recorded was used in the overall calculations of interobserver agreement. This method has been referred to as "Interval by Interval" (I-I) reliability estimate (Hawkins & Dotson, 1975). The major advantage of using such an equation, according to Hartmann (1977) is that it has "computational and interpretative simplicity (as well as) utility in assessing whether the difference between sessions represents real change or merely observer error" (p. 105). The value of this percentage agreement statistic is, however, dependent on the rate of behavior obtained. The higher the occurrence of a behavior, the more accurate is the percentage agreement. With low frequency behaviors, one disagreement can artificially decrease the overall score.

The same procedure for obtaining reliability was followed for both studies in this investigation. Reliability was established prior to the collection of data. Data collection did not begin until all observers received a minimum of 80% agreements. The process involved the observers being divided into groups of two to three observers. Each group observed a minimum of three children during the same time intervals. Only one observer listened to the prerecorded cassette tape and verbally informed the other group member(s) when to observe and when to record behavior. These reliability scores were conducted during lunch periods on consecutive days. Children were selected so that there were children who were highly socially active as well as those who appeared to be less socially active on the playground. Observers were informed not to discuss the scores until the completion of the session. At this time, discussion of data was permitted though the coded responses were not altered. The criterion observer was randomly selected from each of the different groups. However, there was one criterion observer (the principal investigator) who was used on occasion and placed into groups at random. Initial reliability scores for Study One ranged from 75.0% to 92.0% with a mean of 83.0%. The scores for Study Two ranged from 88.0% to 93.0% with a mean of 90.5% (see Tables 1 and 2).

This same procedure was again followed at the end of the data collection period for Study One. Due to the short time span between reliability checks (i.e., 5.5 weeks), it was felt that four observers, randomly selected, would be sufficient to estimate reliability. These observers were randomly selected by choosing their names from out of a hat. The scores obtained for the two groups comprised of two observers were 82% and 89%. These high levels of interobserver agreement indicate that agreement was high at both the beginning and end of the study. Since Study Two involved only two weeks of data collection, it was felt that the time span was not long enough to require a post reliability check.

TABLE 1

Interobserver Agreement Scores for Study 1

	N	Mean Agreement	Range of Agreement
Pre	14	83.0 %	75.0 - 92.0 %
Post	4	85.5 %	82.0 - 89.0 %

TABLE 2

Interobserver Agreement Scores for Study 2

N	Mean Agreement	Range of Agreement
2	90.5%	88.0 - 93.0%

As O'Leary and Kent (1973) note: "Accurate reliability assessment provides a critical indication of the generality of observational measures" (p. 87). It assesses the accuracy and objectivity of the data. However, even when high reliability measures are obtained, it does not necessarily indicate high accuracy of response scores. It has been demonstrated that observers shift their observational criteria in response to expectations employed by reliability assessors (Romanczyk, Kent, Diament, & O'Leary, 1973). In effect, there could be a systematic drift of coding responses which would not be detected in a reliability measurement. Drift, as defined by Kazdin (1977), "refers to the tendency of observers to change the manner in which they apply the definitions of behavior over time" (p. 143). Hence, if observers are in direct contact with each other, they may develop similar variations of the original behavior definitions. In this study, there was no attempt made to estimate drift. Frequent discussions between the investigator and the observers may have helped to minimize drift.

Establishing criteria at the beginning and end of the data collection period is no guarantee that there was consistent high reliability in recording throughout the study. Biasing of measurement could have arisen from the knowledge that reliability was being assessed. It has been demonstrated that when observers are aware that their measures are being checked, they will become more careful in their recording procedures. This is referred to as reactivity of reliability assessment (Johnson & Bolstad, 1973; Reid, 1970; Romanczyk et al., 1973; Sulzer-Azaroff & Mayer, 1977). Ideally, observers should not be aware of exactly when reliability assessments are being made. However, due to the number of observers and schools involved in this study, this ideal was impractical. Accuracy was reinforced through random covert monitoring of observers throughout the study and by providing verbal reinforcement and feedback on the accuracy of the observations: "It seems that, along with all other categories of behavior, reliable observation is best maintained when observers are reinforced from time to time" (Sulzer-Azaroff & Mayer, 1977, p. 72). Anectodal notes recorded by the investigator further assisted in maintaining a high level of accuracy. These notes, in which difficulties were identified and clarified, were kept daily. Problems were dealt with on the same day by the criterion observer to alleviate further difficulties and misunderstandings.

Study One

The primary purpose of the first study was to describe the general social interaction patterns of the subjects and to identify those children in the sample who were the most socially active on the playground. This information was then used to examine the relationship between social competence in the classroom as indicated by the ACCEPTS assessment questionnaire and social behavior on the playground as measured through naturalistic observations. A total of 28 days of data was obtained for this study.

Population and Sample

The participants were children, 6 to10 years of age, all of whom had been classified as "moderately mentally handicapped" and placed in special education classes within the Public, Catholic and Separate School Boards in Edmonton, Alberta (see Table 3). A total of 45 children, 20 females and 25 males, from six different schools participated in Study One. All children from these schools within the predefined classification, excluding those who were absent during the initial assessment period as well as those children for whom parental permission was not given, were included in the sample population.

TABLE 3

Subject Profile

	AGE		ETIOLOGY		SECONDARY HANDICAPS			
Gender	Mean	Range	Unknown	Down's	CP	Hearing	Vision	Other*
Males	8.2	6.0 - 10.5	10	15	2	4	1	5
Females	8.1	6.5 - 10.5	14	6	2	2	1	5

*includes epilepsy, small stature, obesity

Physical setting

Both studies were conducted on the playgrounds of schools located in the Edmonton area. The investigation was conducted during the winter months of February and March.

Consequently, for the majority of the data collection period there was snow on the ground and the children were dressed accordingly.

The first stage of this investigation was conducted on the playgrounds of six schools in Edmonton and the surrounding communities. These schools differ in terms of the layout of the play area and type of equipment available. Four of these schools were equipped with playground apparatus which included the following: slide, merry-go-round, monkey bars, swings, and a variety of other climbing platforms. The other two schools had no play equipment available. All six playgrounds had a cemented area for hopscotch, skipping, and a field for participating in team sports such as soccer and baseball.

Time sampling

According to Sackett (1978), "The empirical goal of observational research is to gather samples of behavior that are representative of subjects' actual response repertoires" (p. 5). This is most frequently obtained through time sampling procedures. The influence of this methodology stems back to Parten's (1932) classic study of the play behavior of preschool children. The central purpose is to describe and not necessarily to identify any cause-and-effect relationships. In effect, time sampling can tell researchers which children socially interact more frequently but it cannot tell them why.

In most of the published studies using observations as the primary methodology, sampling strategies have been used. These strategies typically involve recording the occurrence of predefined behaviors along a preset time dimension:

> A common unit for recording observations of ongoing behavior in naturalistic settings is a simple tally of the occurrence of pre-selected categories of behavior.

> Typically, an arbitrary partitioning of the time dimension is used to provide a frame of reference within which the behavioral observation can be recorded. (Jones, 1973, p. 120)

Typically, the time period is divided into short intervals during which the observer records whether the target responses have occurred (Wall, 1981). Specifically, the first stage of this research study involved a modification of whole interval time sampling (Sulzer-Azaroff & Mayer, 1977) where the predominant behavior or rather the behavior occurring for the majority of the time interval was recorded. This study used equal 10 second time intervals with equal time intervals (10 seconds) being allotted for observing and recording the behavior. According to Brandt (1972), there is no standard established for determining the size of the behavioral units to be measured. Time units in observation studies have varied from a fraction of a second to five minute intervals. The only criterion for establishing time units is that the duration used be representative of the target behavior under investigation. Since the instrument in this study was designed to measure both the levels of activity and social participation, behaviors occurring frequently on a playground, it was felt that 10 seconds would be appropriate to obtain a representative sample (Sackett, 1978).

Observers

The observers involved in this study were 14 graduate and senior undergraduate students in the Department of Physical Education and Sport Studies at the University of Alberta in Edmonton. All of these observers were studying adapted physical education. Observers underwent 10 hours of intense training with videotapes, discussion, and demonstration on the playground. Training sessions were continued until the observers' responses reached the criterion of reliability established at the outset of the study.

Instrumentation

There were three instruments employed in the overall research project. The first study involved two of these instruments. A brief description of each follows:

1. Social Assessment: The ACCEPTS (A Curriculum for Children's Effective Peer and Teacher Skills) social skills program was used in this study to initially assess the social skills of the subjects. The ACCEPTS program is designed for use with primary and intermediate aged children with mild to moderate mental handicaps. It consists of two major components, namely assessment and direct intervention. Its aim is to teach critical social behaviors essential for a successful adjustment to the demands of a mainstreamed setting (Walker et al., 1983). The teacher questionnaire which was developed by Walker et al. (1983) is used to identify which of the 28 social skills contained in the ACCEPTS curriculum to teach to a given child (see Appendix B). It provides information on the target child's classroom and peer-to-peer behavior adjustment following mainstreaming (Walker, 1983). The teacher assesses the child's behavioral level on a 5-point Likert scale for each item in the questionnaire. This program has been successfully applied by a number of professionals in the field of Education. Unfortunately, studies demonstrating the model's success in facilitating the mainstreaming process have not been conducted. The curriculum has, however, been tested for its validity in instructional settings by the authors during its final stages of development (Walker et al., 1983).

The questionnaire presented in Appendix B was the instrument given to the special education teachers to assess their children's social competency. The teachers were asked to complete the questionnaires in conjunction with the classroom aides. Each questionnaire took between 2 to10 minutes to complete. The scores obtained from these questionnaires were later used to compare the social skills of the children in the classroom as perceived by the teachers and the observed level of social behavior on the playground. These scores were based upon a percentage which was obtained by dividing the sum of all the scores obtained for each question by the total possible score.

2. Social Behavior Categories (general): The coding system is comprised of four general categories of social behavior which are mutually exclusive (see Appendix B). These categories of behavior were organized into a checklist format comprised of the following four rows: (1) unobservable/teacher interaction; (2) activity level; (3) general social interaction categories; and (4) play equipment. Essentially, these categories described whether the child was active or inactive; whether he or she was involved socially with any other children, either handicapped or nonhandicapped; and the type of play equipment being used during this interaction (see Appendix C for definitions). However, for the purposes of the present study, activity level and play equipment were not analyzed.

Treatment of data

These observations yielded frequencies of occurrence for each of the five categories of behavior defined in the instrument for each subject. Frequency measures which reflect the level of social participation on the playground were obtained by calculating the number of scores for each category of behavior. These frequencies were then transformed into percentage of observable time for each category. These scores were examined and compared with the findings of the social assessment questionnaire. The scores obtained from these questionnaires were rank ordered for each of the 45 subjects participating in this study. To determine if there was a significant relationship between these assessment scores and those obtained from the observations on the playground, a Pearson Product Moment correlation was performed. Based on these ranked scores, the children were then divided into three groups (high, medium, and low) reflecting their level of social skills. This data was further subjected to an Anova which indicated that there were significant differences in the group scores. A Scheffé F-test of significance was done to determine where these differences lay. A bar graph was used to visually display the frequency distributions obtained for the five general categories of social participation and a box and whisker graph was used to display the target of peer interaction (i.e., handicapped vs nonhandicapped). Finally, T-Tests were conducted to determine if there was a significant main effect for setting (i.e., equipment vs no equipment) and to compare high and low social assessment groups with the target of peer interaction on the playground.

Study Two

The second part of this overall research project examined in greater detail the specific social behaviors displayed by the 10 most socially active subjects on the playground. Social behaviors were classified into eight sub-categories of behavior consisting of nonverbal, verbal and cooperative behaviors as well as any negative social interaction occurring. A second related question focused on the target of peer interaction (i.e., handicapped vs nonhandicapped). Data was collected on 10 separate days for this study.

Population and Sample

The second part of the investigation involved 10 children (five females and five males). These subjects were selected from the 45 children used as subjects in Study One to be further observed with particular emphasis on the specific nature of the social interactions being displayed by these children on the playground. These subjects were chosen on the basis of their level of social skills as recorded in the first stage of the study and the proximity and accessibility of their schools. Hence, those children displaying the most social interaction were chosen to participate in the second stage of this investigation.

Physical Setting

Three of the six schools used in Study One were involved in the second part of data collection. Two of these schools comprised the largest sample of children involved in the study. Both were equipped with playground apparatus. For comparative reasons, a third much smaller school with no playground equipment was utilized for observing specific social skills.

Event Sampling

The second stage of this research project involved the simultaneous use of whole interval time sampling and event sampling procedures for recording observational data. Event sampling was used within whole interval time sampling procedures. The five general levels of social behavior of Study One were again recorded using whole interval time sampling. The eight sub-categories of social participation were also recorded at the same time using a modified event sampling technique where all relevant behaviors within a time sample were recorded. Rather than simply recording the occurrence of a specific behavior, as Medinnus (1976) relates, event sampling attempts to identify all relevant behaviors within a given time sample: " . . . the concern is with describing and understanding a particular unit of behavior" (p. 21). It includes, therefore, more precise categories of the specific events under investigation. Hence, as used in this particular study, event sampling involved recording all relevant behaviors during the defined time interval rather than identifying sequences of behaviors as in the traditional use of event sampling.

Since event sampling has historically developed along with time sampling out of the behavioral science of traditional psychometric practice and theory, it is subject to the same advantages and disadvantages. One major advantage to this system of recording behavior is that it enables the observer to easily record several behaviors occurring concurrently. A major disadvantage is that there is no true unit of measure obtained. Frequency of occurrence per interval can be calculated but the duration of time engaged in behavior cannot be measured (Sackett, 1978).

Despite some limitations, however, event sampling is a useful means of collecting data of interactions of a social nature where behaviors are not necessarily mutually exclusive. In this context, all behaviors could occur concurrently with one another and were, therefore, recorded simultaneously.

Observers

There were two observers, the primary researcher and a secondary observer, involved in the second stage of the investigation. This segment occurred concurrently with the first stage of this investigation. The second observer, a senior undergraduate student specializing in adapted physical education, was chosen primarily on the basis of initial reliability scores (83%) obtained in a pilot instrument comprised of both the general social behavior categories of Study One and the specific social behaviors of Study Two.

Since both observers had previously been collecting data using the initial instrument in Study One and were already familiar with the coding procedures and the context of observations, training procedures were minimal. On site practice had been given in the initial stage of the study and was, therefore, not provided for in Study Two as it was felt that this was not needed. However, the two observers did meet on several occasions to review the instrument verbally, clarifying any difficulties and redefining the behaviors and procedures to be followed. Reliability checks performed on two consecutive days at two different schools yielded reliability scores of 88% and 93% respectively.

Instrumentation

Study Two involved the use of one instrument designed to focus more specifically on the social behaviors of the most socially active children and to determine which group of peers (i.e., handicapped or nonhandicapped), the participants interacted with to a greater extent. This stage of the investigation involved an extension of the original checklist format used in Study One to include eight specific defined behaviors of positive and negative social interactions (see Appendix B). These sub-categories included the following: taking turns/sharing, leading/following, assisting, physical contact, group activity, verbal social interaction, negative physical contact, and negative verbal interaction. These specific behaviors were not necessarily mutually exclusive and, therefore, more than one behavior was scored simultaneously during one interval period. They were designed to describe the specific type of interactions occurring.

The checklist consisted of three rows. The first row involved defining when the target child was unobservable or interacting with a teacher. To determine which group of peers were most frequently interacted with, the second row, which was used in Study One, defined the target of positive social interaction . Finally, the third row included the eight specific sub-categories of social behavior. Moreover, the first two rows involved recording the most predominant behavior (i.e., whole interval time sampling) while the last row involved recording all behaviors occurring during the time interval (i.e., event sampling) (see Appendix C for definitions).

Treatment of Data

Frequency counts and rate measures were determined for each of the eight sub-categories of social interaction which were then represented in a bar graph to display the distribution of scores obtained. In addition, a frequency percentage based upon total observation time was obtained to determine which group of peers, handicapped or nonhandicapped, the subjects interacted with to a greater extent.

Validity of Research Project

The internal validity of a study is determined by the extent to which extraneous variables have been controlled by the researcher and the extent to which the effects can be attributed to the independent variable (Chmiliar, 1986). Numerous threats to internal validity may exist. The extent to which one is present, however, is determined, in part, by the nature of the research design. Threats to internal validity for both of the studies involved in the investigation may include history, maturation, instrumentation, subject selection, subject mortality, and reactivity (Kratochwill, 1978). A brief discussion of these potential threats and steps that were taken to control these influences are outlined as follows:

1. History: The opportunity for other outside events to occur and confound the natural display of behaviors is increased when the study extends over a long period of time. Since the teachers were informed as to the general nature of the study, they could have conveyed information to their students affecting the natural flow of behavior.

2. Maturation: This refers to physical and/or psychological changes occurring within the subject over the course of the study which, in turn, may affect performance (Kratochwill, 1978). However, according to Chmiliar (1986), the influence of this extraneous variable can be minimized by careful examination of the baseline data for any visible trends. Since this investigation did not collect baseline data, the data obtained from both the training sessions and reliability estimates were used for this purpose. Furthermore, in the absence of intervention, the patterns of social interaction observed in integrated settings are relatively stable (Strain, Shores, & Timms, 1977).

3. Instrumentation: The use of potentially unreliable measuring devices can pose a serious threat to the internal validity of a study particularly, as Kratochwill (1978) suggests, with data collected by observation. However, to alleviate such confounding variables as observer drift and bias, caution was exercised in the design and application of the observer coding system. In addition, the observers

were placed on an informal random check system against a criterion observer (Wasson, 1980).

4. Subject Selection: Initial differences were expected to exist among the children in terms of their social competence. This difference in social competence was accounted for by conducting an assessment prior to the commencement of data collection and assigning children to high and low groups.

5. Subject Mortality: The loss of subjects or attrition over the length of the study poses a threat to internal validity as it may obscure the findings obtained (Kazdin, 1980). This was partly controlled for by choosing subjects with a consistent rate of attendance in school. Those children who were absent for a considerable number of days during the training sessions and reliability estimates were omitted from the study.

6. Reactivity: To control for reactivity, the observers involved in this study were situated, as unobtrusively as possible, around the periphery of the play areas. Furthermore, the observers were instructed not to interact or interfere with the children's free play except for reasons of safety (Titus, 1985). Children were informed, when they inquired, that the observers were teachers supervising play activities and were, therefore, to be treated accordingly. If a problem arose (e.g., a child crying), it was redirected to a teacher.

7. Combination of these Threats: For example, a combination of threats may refer to a combined confounding effect of selection and history (or maturation).

Kazdin (1980) describes this threat as, "the fact that the intact or already formed groups may differ on such variables as history (or maturation)" (p. 41). Hence, groups of children from different classrooms may reflect the interaction effect of extraneous variables.

The extent to which the results of the study are generalizable to different subjects, settings, observations, and tests is also an important consideration. According to Kratochwill (1978), the population involved in the study and ecological factors are the two major contributors to the external validity of an investigation. Pertinent threats to the external validity of this study included the following:

1. Population Validity: This concerns the extent to which the subjects used in this study are representative of the target population. Since the participants were chosen from an intact group (i.e., segregated classrooms in a public school), this may limit its generalizability to other population groups. However, in order to improve the generality of the findings that were obtained in this study, a large number of subjects were used therefore increasing the variability of the sample under observation.

2. Ecological Validity: Ecological validity refers to the extent to which the results of this study can be generalized from the environmental conditions obtained in this investigation to other settings (Chmiliar, 1986). The daily time and season (i.e, winter) of data collection may restrict the generality of the findings. In addition, the ratio of 'handicapped' to 'nonhandicapped' may differ in other settings. However, repeated sampling of the dependent variables as was done in this study

generally increases the ecological validity of the results (Kratochwill, 1978). Furthermore, behaviors were observed across an extended period of time at various points in the day thereby minimizing this effect.

Kratochwill (1978) further defines a number of additional threats to the ecological validity of a study. A brief description of these factors follows:

1. Measurement of Dependent Variable(s): The study may be limited to the concise definitions of the dependent variables. Consequently, the target behaviors under careful observation as described by the researcher may limit the extent to which these behaviors can be generalized to other similar behaviors.

2. Hawthorne Effect: The extent to which the subjects are aware that they are being observed may influence the manner in which they behave. Therefore, the obtained results may not generalize to other subjects who do not possess such knowledge (Grigg, 1983). However, as previously discussed, the observers were instructed to behave as unobtrusively as possible. Consequently, after several weeks, the subjects became accustomed to the observers.

3. Novelty Effects: The extent to which the observers created a new stimulation in the environment were minimized by the training sessions and estimates of reliability. This allowed time for the participants to become accustomed to the new persons on the playground.

CHAPTER IV

RESULTS

The primary purpose of this investigation was to describe the social interactions of children with moderate mental handicaps on school playgrounds during free play. This central purpose was further divided into three general sub-problems. The first sub-problem is addressed in Study One while the two other defined sub-problems are addressed in Study Two. Each of these three sub-problems will be described individually. The major forms of data analysis employed for both studies were descriptive tests involving frequency distributions, t-tests, correlations, and the graphic display of data.

Study One

The central purpose of this study was to compare the children's social behavior in the classroom and their level of social interaction on the playground. An initial social skills assessment was used to determine if those children who were considered as socially competent in their classroom by their respective teachers were also the most socially competent on the playground during recess and lunch hour. Specifically, the first sub-problem was to examine the relationship between social competence in the classroom and social behavior on the playground.

In addition, the observations involved in this first phase of the investigation were further used to describe the general social interaction patterns of the subjects in order to identify those children in the sample who displayed the most social behavior on the playground. The target of these children's social interactions was also examined.

Finally, the type of playground was examined to determine if this was a critical determinant of social behavior.

Social Assessment

Social assessment was achieved by means of a questionnaire taken from the ACCEPTS program and completed by the teachers of all 45 subjects involved in this study. Based on these initial assessments, it appears that, as a group, the subjects employed in this study were not socially skilled according to the criteria of the ACCEPTS program. Percentages were obtained by dividing each individual's final score on the 28 questions by the total highest possible score and multiplying by 100%. The mean score obtained on the questionnaire was 56.1% with scores ranging from 27.1% to a maximum of 85.0% (see Table 4). As Table 4 indicates, these scores were broken down into the five skill clusters as defined in the assessment. According to these final scores, the children in this study were the least competent in 'coping' skills (45.6%) and the most competent in 'making friends' skills (71.5%). There was no significant difference found in terms of gender.

TABLE 4

Social Assessment Scores (ACCEPTS) of
Children with Moderate Mental Handicaps

Skills	N	Mean (%)	SD	Min.	Max.	Range
Classroom	45	58.2	16.7	20	100	80.0
Basic interaction	45	54.0	18.6	26.7	93.3	66.6
Getting along	45	58.3	17.3	24.0	92.0	68.0
Making friends	45	71.5	18.4	26.7	100	73.3
Coping	45	45.6	11.6	20.0	66.7	46.7
Total	45	56.1	14.1	27.1	85.0	57.9

Description of General Level of Social Interaction

In order to obtain a score representing the level of positive and negative social interaction occurring on the playground, frequencies of observable time were determined for each participant. To obtain these values, the number of scores recorded for each category was tabulated and divided by the total observable time and multiplied by 100%.

A summary of the frequencies obtained for each of the five categories of general social behavior observed on the playground is represented in both a table and a bar graph (see Table 5 and Figure 1). It appears that these children predominantly participated in solitary activity involving little or no interaction with other children on the playground. The children spent 43.2% of their free play time engaged in 'no interaction'. However, the second most frequently displayed social behavior was 'positive social interaction' with a score of 34.2% and the least frequently observed behavior was 'negative social interaction' with a score of 2.0%. Therefore, it appears that, for most of their time on the playground (77.4%), these children were either engaged in no interactive behavior or in positive social interaction with very little negative social behavior being displayed.

TABLE 5

Distribution of General Social Interaction Behaviors

Categories	N	Mean (%)	SD	Range
Negative Social Inter.	45	2.0	2.1	10.1
Positive Social Inter.	45	34.2	18.1	72.2
Teacher Interaction	45	5.2	5.4	25.7
Observing	45	14.1	7.2	32.4
No Interaction	45	43.2	19.2	81.3

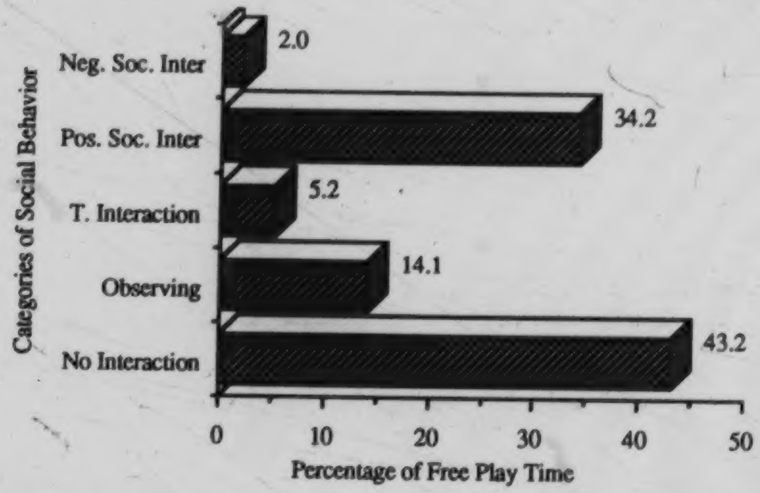

Figure 1. Distribution of General Social Interaction Behaviors

Playgrounds With and Without Equipment

Since two of the schools involved in this study did not have playground equipment available on the school grounds, it was important to determine if the presence of play equipment might have been a factor in the amount of social interaction displayed by the children. In order to determine if there was a significant main effect for setting (i..e., equipment vs no equipment), an unpaired t-test was performed. Results indicated no significant effect for play equipment suggesting that the availability of play equipment on a school playground does not affect the level of social interaction (see Table 6). However, there are several other factors related to play equipment and their effect on social interaction which will be discussed in Chapter V.

TABLE 6

Comparison Between Type of Playground and
Percentage of Play time in Positive Social Interaction

Group	N	Mean (%)	SD	T-Test
Equipment	37	32.3	17.1	1.55
No Equipment	8	43.0	20.8	

No Significant Difference

Relationship Between Social Assessment and Level of Positive Social Interaction on the Playground

A Pearson Product Moment Correlation, the most widely used measure of correlation, was performed to determine if there was a significant linear relationship between the scores obtained on the social assessment questionnaire and the positive social behavior observed on the playground (see Table 7). The results indicated an overall correlation of 0.51 which is significant at the .01 level for N=40. In social research, this value is considered to represent a moderate to relatively strong relationship. However, only 26% of the variance is shared between these two variables with 74% remaining unaccounted for. Furthermore, as Table 7 indicates, the 'classroom' category of social behavior was the only correlation found not to be significant in relation to the other four social skill categories.

TABLE 7

Correlation Between Social Assessment and
Positive Social Interaction on the Playground

Skills	N	*r	r^2
Classroom	45	0.26	0.07
Basic Interaction	45	0.51	0.26
Getting Along	45	0.39	0.15
Making Friends	45	0.47	0.22
Coping	45	0.43	0.18
Total	45	0.51	0.26

*Pearson Product Moment Correlation

For N=40 $r \geq 0.393$ achieves significance at $< .01$

To further lend support to these findings, the paired measurements were subjected to a One Factor Anova. This involved dividing the 45 subjects into three groups--low, medium, and high--based on the ranked scores obtained on the ACCEPTS assessment questionnaire. This was determined by looking for natural patterns in the scores so that 33% of the subjects would be in each group. The low group consisted of scores under 50%; the medium group consisted of scores below 62%; and the high group consisted of scores above 62%. These groups were fairly evenly distributed in terms of the number of subjects in each group with 13, 17, and 15 in the low, medium, and high groups respectively. The social behavior scores obtained from the observations were compared with these three groups. The group means are visually displayed in a box and whisker graph in Figure 2. Overall, there was significant difference at the .01 level among the three groups of children.

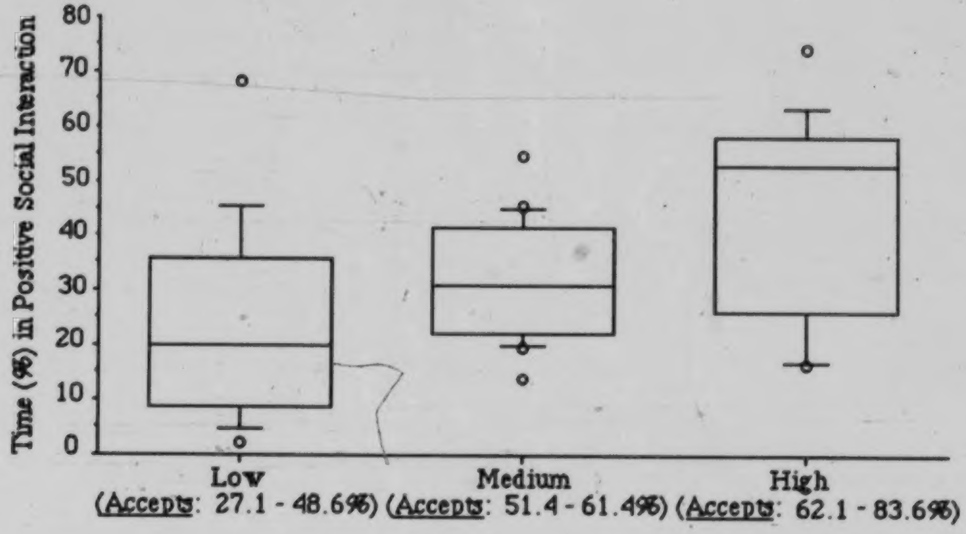

Figure 2. Box and Whisker Representation of the Comparison Between Social Assessment Groups and Social Interaction on the Playground. The 'box' represents the 25th, 50th, and 75th quartiles, while the 'whiskers' represent the minimum and maximum values.

The Scheffé F-Test was then performed on the data to determine where the significant difference was among the three groups of children. The Scheffé test of multiple comparisons is considered to be much more rigorous than other similar methods with regard to Type I error (Ferguson, 1981). It is, therefore, a more conservative test leading to fewer significant differences.

As Table 8 indicates, according to the Scheffé test of significance, there was a significant difference between the children ranked as high and those ranked as low in terms of the amount of social behavior displayed on the playground. However, there was no significant difference obtained between the medium group and the children ranked as either high or low in social behavior.

TABLE 8

Comparison Between Mean Group Assessment Scores and Positive Social Behavior on the Playground

Comparison	Mean Difference (%)	Scheffé F-Test
Medium vs Low	7.8	0.84
High vs Low	21.3	*5.60
High vs Medium	13.6	2.78

*Significant at $p < .05$

Handicapped vs Nonhandicapped

It appears that, as a whole, all 45 subjects involved in the study interacted predominantly with their handicapped peers on the playground during free play time. These findings, which are visually displayed in a box and whisker graph in Figure 3, indicate that the children engaged in positive social interaction to a much greater extent with their handicapped peers (24.7% of their free time) as compared with a mean score of 7.2% of their free time engaged in social interaction with nonhandicapped peers. These results raise some interesting implications which will be presented in the discussion.

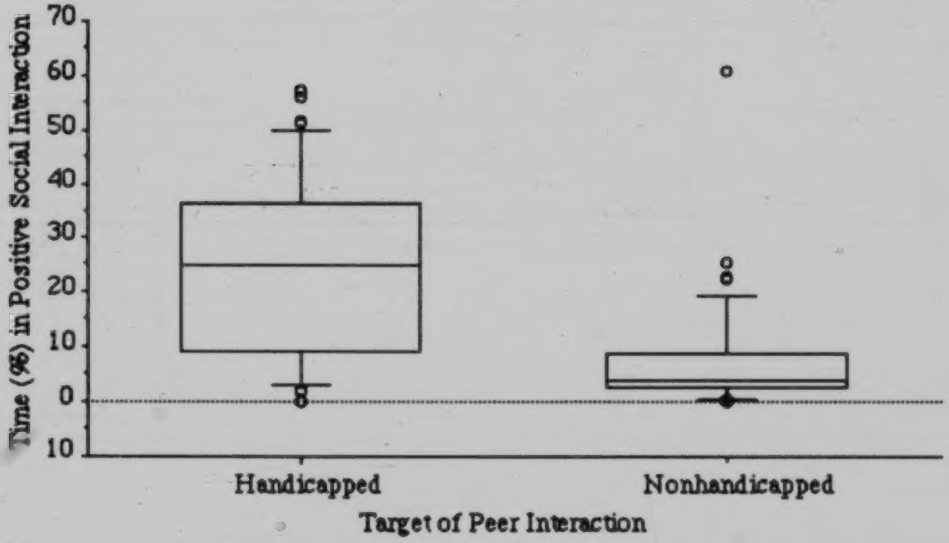

Figure 3. Box and Whisker Representation of the Percentage of Positive Social Interaction Time Spent with Handicapped and Nonhandicapped Peers. The 'box' represents the 25th, 50th, and 75th quartiles, while the 'whiskers' represent the minimum and maximum values.

An unpaired two-tailed t-test was performed on the two groups of children based upon ranked assessment scores (i.e., high and low). This was done to determine if the children in the higher socially skilled group interacted with their nonhandicapped peers more than those children in the lower socially skilled group. The findings indicated no significance (see Table 9). In other words, the children in the high social assessment group were not significantly more socially active with their nonhandicapped peers than the low social assessment group.

TABLE 9

Comparison Between High and Low Social Assessment Groups and Time Spent in Positive Social Interaction with Nonhandicapped peers

Group	N	Mean (%)	SD	T-Test
Low	13	27.1	27.0	1.05
High	15	17.7	21.5	

No Significant Difference

Study Two

This study examined in greater detail the specific types of social behaviors displayed by the 10 most socially skilled subjects involved in the overall investigation. These children were chosen primarily on the basis of the scores obtained on the social skills assessment questionnaire performed in Study One in combination with the observational frequency scores. These 10 children were, therefore, involved concurrently with both studies during the length of the observational period (i.e., 5.5 weeks).

There were two sub-problems involved in Study Two. First, to examine the specific social behaviors displayed by the most socially active children in spontaneous interaction with their peers on the school playground. Second, to determine which group of peers, namely handicapped or nonhandicapped, these children interacted with to a greater extent. These findings are presented visually and independently according to each sub-problem.

Description of Sub-categories of Social Behavior

This study, as previously noted, examined the specific types of social behaviors displayed by the 10 most socially active subjects involved in the investigation. These behaviors were based upon eight pre-defined sub-categories of social behavior (see Appendix C). Since these findings were obtained through event sampling procedures, percent scores based on total observation time could not be obtained. Raw scores were, therefore, calculated for each of the eight sub-categories of behavior and expressed in rate of events per minute recorded. To facilitate ease of understanding and interpretation, a bar graph was used to visually display the distribution of these sub-categories of social behavior (see Figure 4). The horizontal axis refers to the rate of social behaviors while the vertical axis pertains to the eight social behaviors as defined in the instrument. As can be observed from Figure 4, 'verbal interaction' was the behavior occurring the most frequently with a rate of 3.0 recordings per minute of observation time. The next most frequent behaviors observed were 'group activity' and 'physical contact' with rates of 1.6 and 1.3 respectively. The social behaviors displayed the least frequently were those of a negative nature, such as 'negative physical' and 'negative verbal' with both rates being 0.3 per minute of observations. This supports the findings obtained in Study One in that the social interaction observed on the playground is predominantly positive in nature with very little negative interaction occurring between the children.

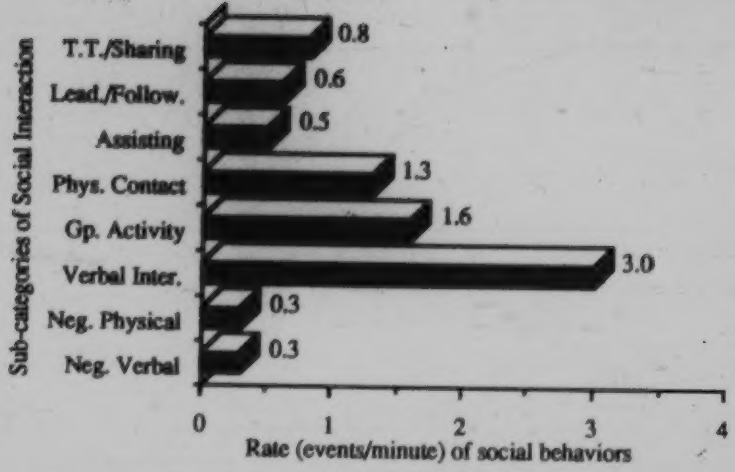

Figure 4. Distribution of Sub-categories of Social Behavior

Handicapped vs Nonhandicapped

A second related research problem of Study Two was to determine which group of peers, namely handicapped and nonhandicapped, these 10 most socially skilled children were interacting with to a greater extent. A pie graph was used to visually illustrate the findings (see Figure 5). As can be observed from Figure 5, the children interacted predominantly (i.e., 89.7% of observations recorded) with their handicapped peers and interacted substantially less (10.3% of recorded observations) with nonhandicapped children.

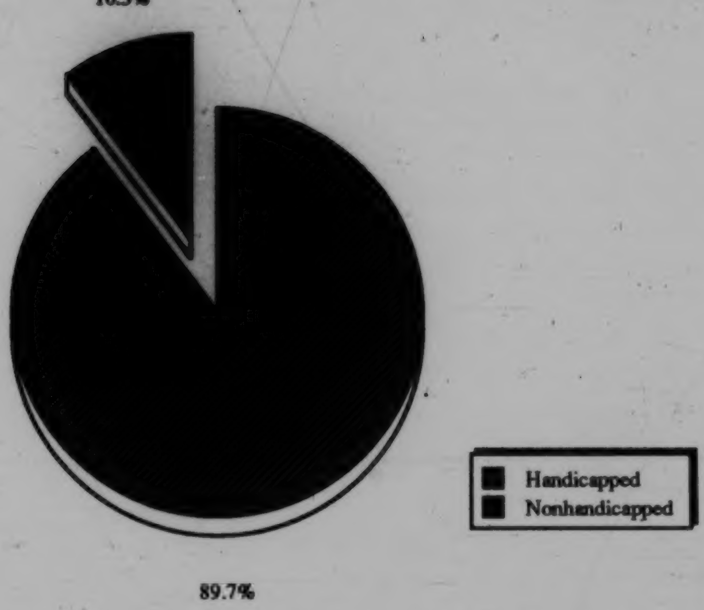

Figure 5. Percentage of Positive Social Interactions with Handicapped and Nonhandicapped Peers During Free Play.

CHAPTER V

DISCUSSION

The Relationship Between Social Competence in the Classroom and Social Behavior on the Playground

The results of the initial social assessment revealed that, overall, these children lacked the repertoire of skills that is required for full spontaneous social interaction in integrated settings. The average score obtained on the ACCEPTS questionnaire was 56.1%. According to the guidelines described in the scoring of the assessment, "Any child whose placement profile indicates they are deficient in 75% or more (21+) of the skills should receive instruction in the entire curriculum" (Walker et al., 1983, p. 19). Based upon this criterion, 24 children in the study require complete instruction in social skills and should, therefore, be exposed to the entire curriculum. Moreover, only three children in this study were socially competent in 75% or more of the skills. The children received the lowest score for 'coping' (45.6%) and the highest rating for 'making friends' (71.5%). The differences in these scores could partly be due to the type of questions in each skill cluster. The questions within the category of 'making friends' are more direct statements of a child's behavior making them easier to observe (e.g., "The student is clean and dresses neatly"). However, the questions in the 'coping' category are more difficult to discern and involve more complex behaviors (e.g., "The student finds other ways to play when he/she asks to join an activity and the answer is 'no'"). Coping skills, then, may require clearer statements to be assessed accurately. They may be more sophisticated social behaviors developing only after the children have become competent in the other four skill clusters.

These results, then, can be interpreted as suggesting that the majority of the children involved in this study are deficient in social skills as measured by the ACCEPTS program, many of whom may require general instruction in all aspects of social behavior. This finding is in accordance with previously documented results in the literature. Gresham (1982), in a recent review of the literature, concluded that one common finding in these studies is that children with developmental disabilities or mental handicaps are generally deficient in social skills. Consequently, these children engage in social interaction less frequently and display more inappropriate social behaviors than their nonhandicapped peers.

This conclusion has led investigators to postulate that these children differ from their nonhandicapped peers in terms of social development. A critical question arising out of these findings appears to be, then, what is the nature and extent of this difference in social skills on the part of children with mental handicaps? Further, do these differences account for this lack of social interaction further impeding successful integration into regular education environments? And, can these differences be modified? The formulation of a comprehensive theory of social skills development and a sound training program depends upon solid evaluation of these questions.

The social assessment scores were compared with the frequency scores obtained in the observations on the outdoor playground to determine if there was a significant relationship. The results of this analysis suggest a positive, moderate to strong relationship between the children's social behavior in the classroom as determined by the assessment questionnaire and the level of social activity observed in spontaneous free play interaction on the playground. Specifically, those children in either the high or low social skills group based on their assessment scores were the same children who were observed to be either the most or the least socially skilled on the playground. Moreover, the only correlation found not to be significant was the 'classroom' category of social behavior (r = 0.26). Competence in social behaviors specifically related to classroom skills, then, may not necessarily indicate a similar level of competence on the playground suggesting that different social skills may be required in these settings. 'Basic interaction' skills received the highest correlation of 0.51 indicating that these social skills are strongly related to the level of positive social interaction observed on the playground.

These findings can be interpreted in a number of ways. First, these results may indicate that the social assessment questionnaire can adequately distinguish between those children who are highly socially active and those children who display very little social activity on the school playground. The instrument , then, can be generalized to other settings outside of the classroom. Secondly, these results may suggest that the teachers of the children involved in the study can assess their students' social abilities with reasonable accuracy, not only in academic settings but also in free play where little direct control of behavior is involved. Finally, this finding may indicate that, overall, the social behaviors required in the classroom may be similar to those social skills needed during unstructured free play on a school playground. These conclusions lend support to the validity of the assessment instrument used in the ACCEPTS program.

The dilemma, however, is that there are no data in the literature indicating an accepted standard of social competence. At what point does a child require intervention or is considered socially competent? These questions give rise to serious concerns, but more importantly, illustrate the need for a normative standard to be established. One standard is the ACCEPTS program which uses a criterion score of 75% on its questionnaire as a means of determining the level of instructional need. However, while the ACCEPTS program appears to discriminate between more- and less- socially active children, an instrument specific to the outdoor playground may be more accurate, and may also have the advantage of being prescriptive. In any case, children will receive the greatest benefits from integrated settings in which norms have been established as guidelines for action. In the final analysis, more research is needed in order to clearly establish social competency for all children on the playground.

The Social Behavior of Children with Moderate Mental Handicaps on an Integrated Playground

The children in this study were generally socially inactive on the playground during periods of integrated free play time. The findings indicate that, as a group, the children predominantly engaged in isolate activities involving little or no interaction with peers. Similar results have been documented in a number of related studies (Beckman & Kohl, 1987; Guralnick & Groom, 1987; Guralnick & Weinhouse, 1984). Children with mental handicaps typically engage in limited social interaction with peers in integrated settings: " . . . the most distinctive feature of the mainstreamed retarded child's behavior appears to be a generally low rate of social interaction with other children" (Taylor et al., 1987, p. 1321). Studies comparing handicapped and nonhandicapped children's rate of social interaction indicate a significant difference between the two groups with nonhandicapped children engaging in social interaction to a much greater extent (Beckman, 1983; Beckman & Kohl, 1987; Kohl & Beckman, 1984).

It has been suggested that this low level of social interaction on the part of the children with mental handicaps could be due to a less sophisticated play behavior pattern when engaging in free play which is "less likely to attract the attention of children" (Beckman & Kohl, 1987, p. 10). Several studies have indicated a limited play repertoire on the part of these children in terms of child-child play restricting spontaneously emitted social exchanges (Li, 1981). It appears that children with mental handicaps engage in more structured, less creative play activities. Their social play is limited and less reciprocal in nature.

These studies, however, were primarily conducted within the classroom environment. It must be remembered that this investigation was conducted on an outdoor playground. Are similar patterns of restricted play behaviors also observed within these latter settings? Since it has been documented that most social interactions occur during the context of play situations (Honig & McCarron, 1987; Kohl & Beckman, 1984), all settings involving free play may prove to be especially problematic for children deficient in social play skills. This raises an important consideration. Research should be undertaken in a number of different settings to determine the nature and extent of social deficits, particularly in relation to social play. Each setting may require a different set of social skills which need to be acknowledged when evaluating integrated programs.

The next most frequently observed behavior displayed by these children in this study was 'positive social interaction' suggesting that when these children do interact it is predominantly positive in nature. It appears, then, that the children involved in this study were, for the most part, either socially inactive or engaged in positive social interaction with very little negative interaction being observed.

This latter finding appears to contradict a common theory in the research literature. One interpretation frequently employed to explain the lack of social interaction between children with mental handicaps and their nonhandicapped peers suggests that the former engage in negative social behavior resulting in isolation and rejection. Upon reviewing the literature, Salend (1984) has concluded that the "research indicates that handicapped students frequently engage in social behaviors that engender negative social interactions with their nonhandicapped peers and diminish social acceptance" (p. 411). Consequently, these children acquire a low social status: "The antisocial behaviors of fighting, talking back to the teacher, and disturbing the class were the most common reasons for lack of social status" (Kehle & Barclay, 1979, p. 48). This misbehavior, then, is associated with high levels of social rejection. This review, however, does not identify the level of handicap of the children. Children with mild handicaps who perform at similar developmental levels as their nonhandicapped classmates may be expected to behave in a similar manner. In other words, because these children's appearance and mannerisms may be viewed by their nonhandicapped peers as similar to their own, differences are not expected. On the other hand, children with moderate to severe handicaps who may differ substantially in performance and in physical appearance may be more tolerated. In other words, nonhandicapped children and teachers may not be so critical of inappropriate behavior on the part of these latter children due to a lower level of expectation.

Other studies, however, have contradicted Salend's conclusion supporting the observations in this study. Taylor et al. (1987) conducted peer assessments of the behavior of children with mental handicaps and their nonhandicapped classmates. Children nominated classmates on the basis of five behavioral descriptions which were either negative or positive in nature. The authors report that the two groups of children "did not differ . . . in perceived disruptive or aggressive behavior" (p. 1328). However, the children with mental handicaps were viewed as lacking in adaptive social skills by their nonhandicapped classmates.

'Observing' the activity of other children on the school playground and engaging in 'teacher interaction' were behaviors not frequently displayed by the children in this investigation. This finding could partly be due to the observation coding rules. It was stipulated that, unless a child was clearly 'observing' another child, observers were to code the behavior as 'no interaction'. If unsure, they were not to make any assumptions . This procedure was followed in order to ensure the reliability of the instrument.

Several studies have supported the finding that children with mental handicaps engage in little observational behavior (Kohl & Beckman, 1984). Guralnick and Groom (1987) have reported that children with mental handicaps "appeared to be less interested in their peers than nonhandicapped younger children as indicated by the follows-activities-of peer and onlooker behavior measures" (p. 1568). This conclusion has been documented by other researchers in the field (Field et al., 1981).

Observing is considered by developmental theorists to be a precursor to social interaction and, therefore, a critical behavior to a child's overall social development (Sinson & Wetherick, 1981). Cavallaro and Porter (1980) have demonstrated that peer preferences may be reflected in measures of visual orientation (i.e., gaze direction). Their study revealed that normal developing children spent more time observing other nonhandicapped peers subsequently resulting in more social interaction between these children. The authors conclude, in accordance with past research findings on the development of social skills, that children with developmental disabilities are "not as competent as are their normally developing peers at expressing or interpreting nonverbal affective behavior" (p. 364). These nonverbal social rules are culturally prescribed and learned during the normal course of social development. These children, however, have often had limited exposure to everyday encounters with their nonhandicapped peers to develop such skills.

Research on nonverbal communication indicates a strong relationship, then, between social interaction and acceptance and the amount of looking behavior. As yet, this behavior has only been studied in relation to normal development and, therefore, represents an area of study requiring further attention. It may provide educators with an understanding of the specific behavioral correlates underlying successful social interaction in the mainstream. Moreover, the lack of observational behavior could be a potential explanation for why modeling and learning do not occur spontaneously in these children with mental handicaps within an integrated setting. In order to develop appropriate social behaviors, these children should first express an awareness of and interest in the behaviors and activities of other children.

Teacher Interaction

Teacher interaction was not a behavior of interest in this study. Nevertheless, it was incorporated into the observational instrument in order to account for all behaviors displayed by the children involved in this study. The findings indicate that these children did not engage frequently in social interactions with teachers. However, since there were no comparable data in this study for nonhandicapped peers within the same setting, it remains unclear if the extent of the teacher interactive behaviors was greater for these children when compared to the frequency of such interactions by their nonhandicapped peers. Past research indicates that social interaction with teachers is a behavior engaged in more frequently by children with mental handicaps than by their nonhandicapped peers. In fact, Field et al. (1981) observed differences in the proportion of time spent in observing and interacting with teachers in an integrated playground during free play: "Peer-directed behavior occurred more frequently among normal children and teacher-directed behavior more often among handicapped children" (p. 56). In free play settings where teacher contact is minimal, these children must be able to cope independent of adult intervention. The development of independent social functioning can only be maintained through limited adult involvement and, therefore, is desirable in such a natural setting.

Playground Apparatus

One factor that is often neglected in the literature which could account for the lack of interaction between mainstreamed children is the type of play material available. On a playground, unlike a classroom, there is a variety of large, permanent play apparatus such as slides, swings, teeter-totters, and other climbing equipment. Does this play equipment influence the rate and level of social interaction? Does it promote or hamper the occurrence of social interactions between these children and their nonhandicapped peers? The data in this study seem to indicate that there was no significant main effect for setting. In other words, the presence of playground equipment did not affect the level of social interaction displayed by the children on the playground.

This finding appears to contradict an accepted theory in the literature dealing with the structuring of playgrounds within the community to enhance the social development of children. In the last decade, a growing number of adventure and creative playgrounds have been built to replace the more traditional ones of the past. This movement began in Denmark with the first adventure playground being completed in 1943 (Westland & Knight, 1982). This trend is represented in Canada in an increased number of Government manuals and pamphlets being published (e.g., Canada Morgage and Housing Corporation) for the purpose of providing guidelines for the development of these playgrounds. The growth in different types of play areas has largely developed out of an increased awareness of the importance of play to a child's developing needs. Moreover, another driving force was the findings of more recent research indicating that a play environment that nurtures the mind, body, and creative abilities of the child will offset difficulties in mental and physical health in later years.

Both of these types of playgrounds (i.e., adventure and creative) provide a unique environment for added stimulation based on age and stage of development. An adventure playground is built by the children themselves, while a creative playground is designed by adults structuring the landscape and equipment in a way that will nurture a child's full development: "The child's play environment must encourage opportunities and outlets in which a child can manipulate, experience, and become familiar with the social, physical, and cognitive aspects of play" (Thomsen & Borowiecka, 1980, p. 4-1). A more recent development in the literature has been the application of this information towards creating "barrier free" play environments for children with 'special needs' (Sensyshyn & Forsyth, 1981). These playgrounds are adapted to the needs of the children while, at the same time, providing the same play opportunities that are available on a regular playground. The premise of these accessible play areas is that play is critical to the social and physical development of all children, including children with 'special needs'.

In the present study, there were two types of playgrounds, traditional and creative. The creative playgrounds were characterized by innovative climbing apparatus, tire swings, and spiral slides joined by a wooden platform. The play equipment were located close together in a designated area of the playground. The traditional playground, on the other hand, consisted of straight slides, swings, a merry-go-round, teeter-totters, and monkey bars. They were spread out on the playground with plenty of running space between each apparatus. The findings indicate no difference in the level of social interaction between these two types of playgrounds involved in this study.

Therefore, the availability and structuring of playground apparatus is felt to be a key factor in children's growth patterns, including the development of appropriate social behaviors. The findings in this study can be considered as tentative due to the small number of schools without equipment (N=2) and the unequal number of subjects in each group. In addition, in some schools, the children were directed to a selected area of the playground and were not given permission to leave this designated area. This restriction may have limited the social play behavior of these children.

There appear to be no other studies in the literature examining the specific effects of playground equipment. However, supportive evidence has been found in related studies investigating the effects of the availability of specific types of play equipment in an indoor free play setting. Titus and Watkinson (1987) reported decreased levels of social interaction when play vehicles were present:

> The assumption would be that the environment was too fast or too hectic for the handicapped children. . . . the handicapped appeared to want to initiate socialization with the nonhandicapped children but were unable to sustain their proximity to them because the latter moved about too quickly. Adding play vehicles to the environment seemed to exaggerate this effect. (p. 216)

However, it must be realized that Titus and Watkinson's study was referring specifically to play vehicles (tricycles, wagons, scooters) rather than the large play apparatus involved in this study.

There have been several studies conducted on the use of play material to promote social interaction through cooperative activities (Guralnick, 1976; Horne, 1982; Johnson & Johnson, 1980; McGill, 1984; Salend, 1981; Stainback & Stainback, 1982). These investigations, however, relate specifically to classroom activities such as learning games and group facilitation of assigned projects. Consequently, they are not directly related to this study. What is more relevant, is determining how the available play equipment can promote greater social interaction during unstructured free play time on a playground. For example, teeter-totters promote social interaction with others because they require the cooperation of two or more children to make use of them. 'Open space' can also promote social interaction. The lack of equipment may indirectly encourage social activities such as tag, racing, or follow the leader due to the lack of alternatives available. On the other hand, equipment such as slides, swings, and merry-go-rounds require no social interaction for their use and enjoyment. In fact, nonhandicapped peers may only be tolerating the presence of these children with handicaps while simultaneously making use of the same equipment. In the present study, these 'neutral' pieces of play equipment frequently gave rise to self-stimulating behavior on the part of children with mental handicaps which further detracted from peer interaction. One final observation is that play equipment requiring vigorous movement may discourage social interaction between children with mental handicaps and their nonhandicapped peers because the former may be unable to keep pace with the latter group of children.

In summary, these points illustrate that certain play equipment may in fact temper social interaction and indirectly encourage isolation. For greater degrees of interaction, playgrounds need to contain equipment which deliberately seeks to promote interactive play. Equally important may be the need for direct training for social interaction skills on the playground. This has practical implications for educators. The manipulation of play material in an integrated free play setting may be an effective means for increasing appropriate social behavior and interaction between children. Further research examining specific play equipment which might be effective in facilitating social interaction in free play, then, is an important area of concern. The development of a taxonomy of play materials not only in indoor settings where physical activity is somewhat limited but within outdoor playgrounds where gross-motor activity involving large, stationary play apparatus is common, would assist in enhancing successful social interaction in natural settings.

Specific Social Behaviors of Interaction

It has been established within the literature that children with mental handicaps engage in very little social interaction with their peers, preferring more isolate activities. However, few of these studies delineate the specific behavioral characteristics, which are perhaps lacking in these children, associated with high rates of social interaction in an integrated setting.

In this study, eight specific social behaviors considered to be associated with high levels of social activity were defined and observed to examine more clearly the specific types of behaviors displayed by children with mental handicaps in an integrated free play setting. The results indicated that the bulk of their social behavior was verbal in nature. Children who engaged in higher levels of social interaction were characteristically involved in more verbal communication with their peers. While verbal interaction was the most predominant social behavior, it must be remembered that this interaction, for the most part, was with handicapped peers.

The vast majority of the literature on the verbal interaction skills of children with mental handicaps compares these children's skills with nonhandicapped peers in integrated settings. Several studies have reported that children with mental handicaps are generally involved in less verbal interaction when compared to their nonhandicapped peers (Field et al., 1981; Kohl & Beckman, 1984). While the children in this study engaged predominantly in verbal interaction, the rate of this interaction may have been substantially lower if it had been compared to nonhandicapped children's verbal behavior on the same school playground. There is no norm, however, provided in the developmental literature with which to make comparisons and determine the extent of any deficiencies in verbal interaction. According to Herink and Lee (1985), children with mental handicaps are not fully integrated into the verbal life of the peer group. However, what about the level of verbal interaction occurring between groups of children who are handicapped? There appears to be no related data in the literature examining the verbal interaction occurring in groups of children with handicaps comparable to mixed groups consisting of children with and without handicapping conditions.

Group activity involving three or more children was the second most predominant behavior observed on the playground. However, these groups were comprised of children with mental handicaps rather than involving mixed groups with both handicapped and nonhandicapped peers. This observation suggests that the children possessed at least a minimal level of social skills for cooperative behaviors such as leading, following, and taking turns. What, however, is the nature of these cooperative activities within these homogeneous groups? Do they differ from the group play of their nonhandicapped peers? It was observed that peer interaction between these groups of children with mental handicaps included games which involved fewer components when compared to the more sophisticated and broad range of games played by their nonhandicapped peers. For example, a group of children with mental handicaps engaged in a game which involved all members, except for one, lying on the ground pretending to be dead. One child would then poke the others and everyone would laugh. There appeared to be no obvious objective or outcome beyond this interaction. In addition, the same game was observed on consecutive days with no alteration or extension of the rules. Conversely, nonhandicapped children engaged in more complex activities involving a clearer objective. For example, in the instance of the game described above, the objective may involve more detailed steps or skills such as the nonhandicapped children remaining as silent and motionless as possible without laughing or otherwise submitting to the provocations of the other participants in the group.

Although the children with mental handicaps appeared less imaginative or flexible, they nevertheless participated in group play exhibiting socially interactive behavior which made the probability of integrative play that much easier. Yet, would this behavior be adequate or appropriate within groups consisting of nonhandicapped peers? A closer examination of the characteristics of group interaction, therefore, must be considered within the context of the mainstreamed setting.

Negative Social Interaction

The behaviors displayed the least frequently were those that were of a negative nature. These observations support previous findings in this investigation indicating that when these children do interact with their peers, it is, for the most part, positive in nature. However, these low negative scores could be due to the guidelines set out in the recording procedures. Observers were trained to record negative behavior only in situations that clearly demonstrate such behavior. If they were unsure, they were informed to record the behavior as positive. For example, 'rough play' was predominantly recorded as positive interaction since it was felt that this type of behavior was a positive and appropriate experience for this age group (i.e., 6 to 10 years). Yet, self-stimulating behavior which was frequently engaged in during solitary activity by the children in this study was not recorded as negative behavior. This raises the question of what is the nature and difference between 'negative' as opposed to 'inappropriate' social behavior? Is 'negative social interaction' a more sophisticated social behavior displayed only by those children who are the most socially competent? Or, does it imply that children with mental handicaps do not have the ability to express their negative behaviors in an appropriate social manner? Negative behavior may be a stronger, more effective expression to describe verbal statements or physical contact with intent to hurt (either physically or mentally). Inappropriate behavior, on the other hand, may include positive or 'neutral' behaviors that may not be acceptable to the demands of a given situation. Much of the solitary behavior on the playground was inappropriate and did not promote social interaction.

These low scores obtained for negative social interaction, then, may not accurately reflect the degree of occurrence. This points to a major limitation of using time and event sampling procedures as methods for recording behavior. The inability of the observer to record the social context of a child's behavior is not considered, leaving unanswered the question of what effect one child's behavior has on another's. Does, in fact, inappropriate social behavior such as self-stimulating behavior have a negative effect on another child's play behavior? Further research relating to the underlying characteristics of negative and inappropriate behavior is needed to clarify and clearly distinguish between these two categories of behavior.

Cooperative Behaviors

Finally, assisting, taking turns, sharing, leading, and following, characteristics of cooperative behavior, were positive social interaction skills displayed the least by these children. The children, then, who were the most socially skilled in the study as determined by naturalistic observations and the ACCEPTS assessment were not active in social behaviors of a cooperative nature on the playground. Perhaps, these behaviors require more attention within the curriculum of the ACCEPTS program.

These observations are in agreement with previous research findings (Faught, Balleweg, & Crow, 1983). In fact, the lack of cooperative behaviors has become one of the defining behavioral characteristics of children with mental handicaps. Peer assessments conducted by Taylor et al. (1987) indicated that children classified as educable mentally retarded (EMR) were perceived as less cooperative when compared with nonhandicapped children. However, since cooperative play is an integral component of positive social interaction, it must be developed by these children in order to maximize interaction in a mainstreamed setting.

Target of Social Interactions

There have been a number of studies indicating that when handicapped and nonhandicapped children are placed in physical proximity to each other, very minimal mixed dyadic social exchanges actually occur between these two groups of children. The findings obtained in this study appear to support these studies indicating that all 45 subjects involved in this study, regardless of their level of social activity, interacted predominantly with other handicapped peers. Moreover, the same finding was obtained for those 10 children who were identified as being the most socially skilled on the playground.

There are several plausible explanations for this marked preference in peer group interaction. First, it must be remembered that these children were selected from segregated classrooms. Children will tend to play with those they know or are familiar with. In other words, these children, like most nonhandicapped children, will play with their fellow classmates who, in this case, also happen to be handicapped. Secondly, perhaps because of their lack of competence in social skills, children with handicapping conditions were not avidly sought out as play partners by their nonhandicapped peers. Children have a tendency to play with children of the same perceived developmental level. The children in this study may have also felt too shy to approach their nonhandicapped peers due to past experiences with failure to elicit positive interactions (Taylor et al., 1987). The observers indicated that several children in the study appeared to want to engage in social interaction with their nonhandicapped peers. However, these same children would begin to approach nonhandicapped peers and then remain at a distance or avoid these latter children by making a wide arc to get past them. Thirdly, for ease of supervision, the teachers and aides directed their children to a designated area of the playground. They were not permitted or not encouraged to move to other areas of the playground. These added factors, then, must be taken into account when interpreting the findings in this study and planning for appropriate intervention.

It is important to note that, despite this lack of social interaction, outright rejection and negative behaviors directed towards children with mental handicaps by their nonhandicapped peers were not observed on the playground. This observation indicates that the integrated setting was not hampering the developmental needs and abilities of either group of children. On the other hand, and more importantly, is a simple absence of negative social interaction an indication of success? Is it enough that these normally developing children TOLERATE the presence of children with developmental disabilities (Watkinson, 1987)? The development of sound integrated programs depends upon solid evaluation and examination of their social outcomes in terms of their meaningfulness to the participants. To be in the mainstream, but not part of it, is maintenance rather than integration. To be acknowledged and incorporated as members of the group is success and, based upon the observations in this study, still needs to be fully realized.

Application to Other Settings

It is important to realize that the findings of this investigation can be applied to other settings, especially ones with a recreational focus. While the educational needs of children with mental handicaps have received considerable attention since the turn of the century, it has only been in the last 30 years that the recreational needs of children with mental handicaps have been recognized (Bullock, 1979). More recently, the development of integrated recreation settings and programs have emerged out of this increased concern and knowledge.

Within integrated recreation programs, one of the intents is to develop social skills. Increased knowledge regarding the structuring of the environment as well as the identification of specific social behaviors associated with successful social interaction can facilitate the process of integration within these settings. In order to learn social skills, children must be able to generalize skills to other settings. Children only spend a small portion of their day on the school playground during recess and lunch times. When children are not in school, they spend the majority of their play time in the home, in the neighborhood (e.g., backyards, open fields, and streets), and in community recreation facilities and programs (e.g., community playgrounds, parks, and recreational centers). Recreational settings, then, represent critical environments for the development and practice of social interaction skills and require more attention within the literature. To be effective, integration must become the responsibility of the recreator as well as the educator.

CHAPTER VI

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary and Conclusions

The purpose of this research study was to examine the social interaction patterns of children classified as moderately mentally handicapped in outdoor, integrated unstructured free play. A total of 45 children, aged 6 to10 years, were observed during recess and lunch times on the school playground to determine their general level of social activity. Social participation, specific social behaviors, and target of peer interaction were investigated in this study. The presence and absence of playground equipment was also investigated to determine whether play apparatus would have an effect on social behavior. The findings in this study lend support to the following conclusions.

An initial social assessment (ACCEPTS) in the form of a questionnaire indicated that the majority of children with moderate mental handicaps in this study do not have an adequate social skill repertoire. They require training in all aspects of social behavior. As a result, these children spend the greatest majority of their free time in solitary play.

The ACCEPTS social assessment is a fairly accurate reflection of a child's social behavior on an outdoor playground during free play. Specifically, it can identify high and low socially skilled children on the playground with reasonable accuracy. Children with good social skills within the classroom setting, then, are generally more socially active on the playground than are children with inadequate social skills. In addition, teacher assessments using the ACCEPTS procedure are reasonable predictors of the level of social interaction on the playground. These conclusions suggest that similar social skills are required both in the classroom setting and on the school playground.

The children in this study were primarily socially inactive while on the playground. However, there was a significant amount of positive interaction occurring on the playground. When children with moderate mental handicaps in this study interacted with their peers, it was predominantly positive in nature with very little negative social interaction being displayed. This interaction, for the most part, was verbal in nature while in groups of three or more children. Moreover, these social exchanges were predominantly with other children of similar developmental levels from the same classroom. Very little interaction was directed towards their nonhandicapped peers or to the playground supervisors. Cooperative play such as assisting, taking turns, and sharing were behaviors not frequently engaged in by the children in this study. Finally, the presence of play equipment on the playground appeared to have no significant effect on the social behavior of children with moderate mental handicaps.

Recommendations

Owing to the lack of research relating to the specific social behaviors associated with successful social interaction in natural settings involving spontaneous free play, there is a myriad of potential research areas requiring further attention. The following recommendations are based upon the findings of this investigation.

The method of gathering free play data on social participation in natural settings should be more thoroughly investigated. Continuous time sampling or more traditional procedures of event sampling techniques may provide richer data regarding the context of the interaction than interval time sampling and the modified event sampling procedure employed in this investigation.

The observational instrument used to measure social behavioral patterns on the playground requires further examination. The categories are broad thereby not capturing the behavior under investigation. For example, the category 'observing' is vague. Is this observing with intent to model afterward? Is it observing a general group of children or specifically focusing on one child? The students recording the behavior in this study expressed difficulty in clearly identifying this type of behavior. 'Verbal interaction' was another behavior that was not easily captured on the playground. At times, the observers were located at a distance and were unable to distinguish verbal sounds. A more detailed description of the individual categories, then, may provide more accurate and useful information with regards to the social interaction patterns of children with moderate mental handicaps in integrated free play settings.

There is a need for assessment procedures that are specific to the situation in which the skills will be used. Appropriate assessment techniques designed specifically for use on the playground are required. While both the ACCEPTS and PEERS programs incorporate the playground within their curriculums, they are not in-depth and focused on the playground itself as a unique environment with different areas of need. Moreover, the role of teachers in the assessment of social skills requires further investigation. Teachers appear to be fairly accurate assessors of their students social behavior. However, can they use this knowledge to modify the social behavior of their students on the playground as well as within the context of the classroom environment?

More research is needed to identify specific behaviors critical in social transactions while keeping in mind the developmental aspect necessary for such an understanding. Specifically, what behaviors are associated with high levels of social interaction? Furthermore, are different social skills required for different settings? The social behaviors required in a classroom for successful interaction need to be further documented and compared with those required on a playground during free play time.

Observations should, therefore, be conducted in both settings in order for these comparisons to be made.

Researchers should be concerned with the developmental factors related to social skills. Normative data on large samples of children who are considered socially skilled at various age levels need to be established to serve as a standard for which to determine specific deficiencies. Without developmental descriptions of normal social behavior, it is difficult to assess the nature and extent of the social deficiency in children with mental handicaps.

In light of the evidence that children with mental handicaps only interact with other children with handicaps, methods need to be established to promote social interaction between handicapped and nonhandicapped children in free play settings without altering the natural conditions of the environment. In order to achieve this, more research needs to be conducted within naturally integrated settings where the children spontaneously interact with little direction or control of behavior. How can the social interaction between handicapped and nonhandicapped children be increased within such an environment without adult intervention? In addition, the social nature of a variety of play equipment should be more fully investigated. The structuring of the classroom environment to promote social interaction has proven effective. These findings should be extended to more natural settings such as the school playground and community recreation facilities. Moreover, the development of procedures to enhance the maintenance of training effects across time and the generalization of newly acquired social behaviors to other settings and social contexts need to be evaluated.

A need exists to develop a play skill curriculum based on stages of development and steps needed to facilitate the development of these skills. Social play skills should, therefore, be incorporated within intervention programs.

For more effective evaluation of social outcomes, more studies should be conducted within settings that are already integrated rather than the common method of setting up an artifially integrated environment. A more accurate assessment of behavior can be obtained in situations that are familiar to the children. In addition, children's level of handicap should be more clearly defined in these studies.

Factors involved in the integration process require further investigation. For example, do children who are mainstreamed into regular classrooms engage in more social interaction with peers on the playground when compared to children from segregated classrooms? Furthermore, should children be integrated according to their chronological age or their developmental level? The most effective method of integration needs to be more clearly understood.

Verbal interaction appears to be a valuable social skill on the playground. Further research focusing on the specific verbal behaviors that promote social interaction on the playground is needed.

Patterns of social interaction involving groups of children as opposed to dyadic exchanges require further investigation. Moreover, studies concerning the nature of social interactions occurring in groups comprised of children with handicaps only compared with mixed groups of children with and without handicapping conditions should be examined.

The development of cooperative social behaviors (i.e., assisting, taking turns, and sharing) in relation to other social skills should be investigated. Are they more sophisticated social behaviors? Are there less complex social skills required as prerequisites to reach higher level skills? And, how do these behaviors relate to successful social interaction on the playground?

Finally, more research is needed on the social participation patterns of older children as well as those with more severe handicaps. Most studies have focused their efforts on preschool children with mild to moderate mental handicaps.

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APPENDIX A

SCHOOL VISITATIONS

Letter of Introduction

Letter of Permission

University of Alberta
Edmonton

Department of
Physical Education and Sport Studies

Canada T6G 2H9

P-421 Universiade Pavilion
Van Vliet Physical Education and Recreation Centre

November 27. 1987

Dear

In the past few weeks I have spoken with you about the research project I wish to undertake this winter concerning the play patterns of mentally handicapped children in integrated physical activity environments. We are particularly interested in observing the children at lunch hour or during recess, to collect data on their social interaction and active participation in this setting. This study is funded by the Canadian Fitness and Lifestyle Research Institute.

In order to complete the study, we would need the following:

1. To do motor skill assessments on six playground skills with moderately mentally handicapped children between the ages of 6 and 10 years. This would require approximately 15 minutes of testing per child, but could be done more quickly in groups during two regular indoor or outdoor physical education classes. We would like to do this in December or early January. The assessment instrument is attached.

2. To have access to school records to determine subjects' ages and IQs if available.

3. To have the opportunity to conduct a pilot study for two days in early or mid January. This would involve observation at recess and/or lunch time.

4. To have twenty days of observation, either at lunch or recess when the subjects are outside. There will be no intervention. Two to four observers would collect data on checklists (attached) and would remain as unobtrusive as possible. This data collection period would be from mid-January to the end of March, either on a daily basis or thrice weekly.

We have requested approval of this project through the Field Services Cooperative Activities Program.

We look forward to working with your school if you are willing to participate in this study with us. We would be happy to provide you and your teachers with the motor assessments, the observational data on the social interaction and active participation of your students, and, of course, the final report of the project.

We hope to follow this initial project with a further project in 1988-89 which might involve an intervention program with some students to improve their playground skills. It is our belief that such skills are crucial to the successful integration of handicapped children in physical activity settings.

Sincerely,

E. J. Watkinson, Ph.D.

EJW/pw
enclosure

December 10, 1987

Dear Parent or Guardian:

In the past few weeks, I have spoken to the school that your child attends regarding a research project I wish to undertake. The study would commence this winter and concerns the play patterns of children in integrated physical activity environments. We are particularly interested in observing the children at lunch hour or during recess, to collect data on their social interaction and active participation in this setting. This study is funded by the Canadian Fitness and Lifestyle Research Institute.

In order to conduct the study, we would need the following:

1. To determine your child's playground skills (motor and social). It is our belief that such skills are crucial to the success of any integrated setting involving physical activity. This will take approximately 15 minutes and would be conducted either in December or early January.

2. To observe your child either at lunch or recess when the children are outside playing in an integrated natural environment. There will be no intervention. Observers will collect data on a checklist and will remain as unobtrusive as possible so that neither your child, nor the other school children will know who is being observed. This data collection period will be from mid-January to the end of March.

The project has been approved by the Edmonton Public and Separate School Boards, Strathcona County School Board, and by the staff of individual schools, subject to you giving permission for your child to participate in the study. Confidentiality of the results and anonymity of the children participating in the study will be maintained in accordance with the School Board's policy. You may withdraw your child at any time before or during the study.

I hope you will allow your child to participate in this study. Please indicate your decision on the return slip.If you have any questions or concerns about this request, please do not hesitate to contact Dr. Jane Watkinson at 432-5602 (office) or 462-9457 (home).

Thank you for your assistance in this matter. We look forward to your response.

Yours Sincerely,

Jane Watkinson

Dr. E. J. Watkinson
Faculty of Physical Education
and Recreation
University of Alberta

Re: OBSERVATIONAL STUDY OF RECESS/LUNCH TIME PLAY

I wish/do not wish* my child to participate.

Name of Child____________________Signature_________________________

Date_________________________

*Delete appropriately

APPENDIX B

DATA COLLECTION FORMS

Teacher Assessment Questionnaire

Observational Instrument for Study One

Observational Instrument for Study Two

SOCIAL SKILLS ASSESSMENT

Date: ____________________

School: ____________________

Teacher: ____________________

Student: ____________________

Classroom: ____________________

Time taken to complete: ____________________

ACCEPTS PLACEMENT TEST

Teacher Rating Instructions

Please read each statement on the placement test carefully and circle the corresponding number that is descriptive/representative of the child's behavior. The numbers 1-5 are a *continuous* scale. Circling number 1 indicates that the statement is *not* descriptive or true; circling number 3 states that the statement is *moderately* descriptive or true of the child, and circling number 5 indicates it is *very* descriptive or true of the child.

For example, an item might read as follows:

The student shares laughter with classmates

Not descriptive or true		Moderately descriptive or true		Very descriptive or true
1	2	3	4	5

If you feel the child does *not* share laughter with classmates, then by circling number 1 you would indicate that the statement is not descriptive or true of that child.

If you feel that the child does this *some* of the time, then by circling number 3 you would indicate that the statement is *moderately* descriptive or true.

If you feel that this happens most of the time, then by circling number 5 you would indicate that the statement is *very* descriptive or true of the child. Otherwise, circle the number (2 or 4) that most closely indicates your rating of the item.

Area I: Classroom Skills

	Not descriptive or true		Moderately descriptive or true		Very descriptive or true
1. The student sits quietly and pays attention to what the teacher is saying.	1	2	3	4	5
2. When the teacher tells the student to do something, the student does it.	1	2	3	4	5

	Not descriptive or true	Moderately descriptive or true	Very descriptive or true
3. The student produces work of acceptable quality.	1 .... 2	3	4 5
4. The student follows the established classroom rules.	1 .... 2	3	4 5

Area II: Basic Interaction Skills

1. The student maintains eye contact while speaking or when spoken to.	1 .... 2	3	4 5
2. The student speaks in a moderate tone of voice (neither too loud/too soft).	1 .... 2	3	4 5
3. The student seeks out others to interact with and initiates a conversation.	1 .... 2	3	4 5
4. The student pays attention when spoken to.	1 .... 2	3	4 5
5. The student responds/answers when spoken to.	1 .... 2	3	4 5
6. The student converses by saying things which are relevant to the topic.	1 .... 2	3	4 5
7. The student shares a conversation by speaking for about the same amount of time as they listen.	1 .... 2	3	4 5
8. The student asks questions that request information about someone/something.	1 .... 2	3	4 5
9. The student keeps a conversation going.	1 .... 2	3	4 5

Area III: Getting Along Skills

1. The student uses polite words such as "please," "thank you," and "excuse me."	1 .... 2	3	4 5

Not descriptive or true — Moderately descriptive or true — Very descriptive or true

2. The student allows others to use or borrow something that belongs to them. 1 . . . . 2 . . . . 3 . . . . 4 5

3. The student follows the rules when playing games with others. 1 . . . . 2 . . . . 3 . . . . 4 5

4. The student takes initiative to assist others when they need help. 1 . . . . 2 . . . . 3 . . . . 4 5

5. The student uses physical contact with others in an acceptable manner. 1 . . . . 2 . . . . 3 . . . . 4 5

Area IV: Making Friends Skills

1. The student is clean and dresses neatly. 1 . . . . 2 . . . . 3 . . . . 4 5

2. The student shows he/she likes something by smiling. 1 . . . . 2 . . . . 3 . . . . 4 5

3. The student compliments by telling someone when he/she likes something. 1 . . . . 2 . . . . 3 . . . . 4 5

4. .The student initiates making friends by: seeking out others to interact with, initating conversation, taking turns talking, and asking the person to spend time with her/him. 1 . . . . 2 . . . . 3 . . . . 4 5

Area V: Coping Skills

1. The student finds other ways to play when he/she asks to join an activity and the answer is, "no." 1 . . . . 2 . . . . 3 . . . . 4 5

2. The student expresses anger by telling someone he/she is angry without hurting them. 1 . . . . 2 . . . . 3 . . . . 4 5

3. When someone teases the student, he/she looks away and does not answer. 1 . . . . 2 . . . . 3 . . . . 4 5

Not descriptive or true | Moderately descriptive or true | Very descriptive or true

4. When someone tries to hurt/fight with the student, he/she tries to walk away. 1 . . . . 2 . . . . 3 . . . . 4 5

5. When someone asks the student to do something he/she cannot do, or does not want to do, the student says, "no" politely. 1 . . . . 2 . . . . 3 . . . . 4 5

6. When things are not going well, the student tries another way. 1 . . . . 2 . . . . 3 . . . . 4 5

GENERAL CATEGORIES OF SOCIAL BEHAVIOR

UNOBSERVABLE ☐ TEACHER INTERACTION ☐

VIGOROUS ☐ ACTIVE ☐ INACTIVE ☐ **

NO INTERACTION ☐ OBSERVING ☐ POSITIVE SOCIAL INTERACTION ☐ H ☐ NH ☐ NEGATIVE SOCIAL INTERACTION ☐

OPEN SPACE ☐ SLIDE/LADDER ☐ SWINGS ☐ FIXED TIRES/TUBES ☐ MERRY-GO-ROUND ☐ BARS ☐ SMALL EQUIP ☐ OTHER ☐ **

RECORDING SHEET FOR STUDY ONE

** Not part of the investigation

SUB-CATEGORIES OF SOCIAL BEHAVIOR

UNOBSERVABLE ☐ TEACHER INTERACTION ☐

NO INTERACTION ☐ OBSERVING ☐ POSITIVE SOCIAL INTERACTION ☐ H ☐ NH ☐ NEGATIVE SOCIAL INTERACTION ☐

TAKING TURNS SHARING ☐ LEADING/ FOLLOWING ☐ ASSISTING ☐ PHYSICAL CONTACT ☐ GROUP ACTIVITY ☐ VERBAL INTER ☐ | NEGATIVE PHYSICAL ☐ NEGATIVE VERBAL ☐

RECORDING SHEET FOR STUDY TWO

APPENDIX C

DEFINITIONS OF SOCIAL BEHAVIOR CATEGORIES

General Social Behaviors of Study One

Sub-categories of Social Behavior of Study Two

BEHAVIOR RESPONSE CATEGORIES FOR SOCIAL INTERACTION

Positive Social Interaction

This behavior is exemplified by a child voluntarily playing with other children while being involved in similar or mutual activity (e.g., climbing up 'monkey bars'). Children are playing in either a cooperative or somewhat competitive manner with each other which may necessitate mutual participation (e.g., running a race, playing tag, or building a sand castle). For further clarification, this type of reciprocal interaction can be divided into the following sub-categories of behavior: taking turns/sharing, leading/following, assisting, physical contact, group activity, and verbal social interaction (modified from Wasson).

Observing

The child is observing other children at play but is not actively involved in the activity under observation. The child does not try to influence, modify or become involved in the activities of the children near him or her (modified from Titus, 1985). This type of behavior may also involve being near a child but not watching him or her (e.g., sitting side by side on a step). Hence, the child is involved in the other children's activity in a non-participatory manner in that the child is definitely observing a particular group of children rather than passively observing anything that happens to be around him or her. The child is located within speaking distance (not shouting) distance of the group (or the child) so that he or she can see and hear everything that occurs (modified from Parten, 1932).

No Interaction

This is described as solitary behavior where the child is participating in a playground activity independently without the involvement and/or interest of other children. This may involve idle, repetitive movement of one's body or a play equipment (modified from Wasson, 1980). The child appears unaware of the activities of his or her peers and makes no effort to become involved with the other children. The child need not necessarily be located at a distance from his or her peers (modified from Parten, 1932).

Negative (or inappropriate) Social Interaction

The child emits physical and/or verbal aggression towards other children. This is behavior of a non-productive nature and can be classified under the following two sub-categories: negative physical contact and negative verbal interaction (modified from Wasson, 1980).

Unobservable

The researcher is unable to observe the child because he or she is either outside the range of the observer (i.e., not within the designated boundaries of the playground) or is absent due to illness, appointment, or other similar reasons.

Teacher Interaction

The child is in direct interaction, either verbally or nonverbally, with a playground supervisor. There must be a clear indication of one-to-one contact between the child and the teacher. Teacher-directed activities may not necessarily involve "teacher interaction".

It is dependent upon the direction of the child's behavior. A child holding a teacher's hand and verbalizing is an example of teacher interaction.

Note

For all social interactions, whether positive or negative, the person with whom the target child is interacting (i.e., handicapped or nonhandicapped) was recorded.

BEHAVIOR RESPONSE SUB-CATEGORIES FOR SOCIAL INTERACTION

Taking Turns/Sharing

Two or more children making use of the same play apparatus. One child waiting for another child to complete their activity on a playground equipment before proceeding himself or herself is an example of taking turns. This could involve one child giving up a swing to allow another child the opportunity to play on it.

Leading/Following

Two or more children are intent upon following one another. This category includes playing either the role of leader or follower and is characterized by the leader expressing pleasure by looking back on the progress of the others. The follower(s), on the other hand, is(are) not necessarily intent on catching the leader, but rather in maintaining the activity itself (modified from Wasson). Running a race and playing tag are also considered leading/following.

Assisting

The child assists another child (or children) in the execution of a task. Assistance may be physical such as helping a child (or children) climb up a ladder. It may also involve verbal direction or information such as explaining to a peer on how to climb onto a teeter-totter safely.

Physical Contact

This involves one child intentionally initiating physical contact with another child in a non-aggressive manner. For example, a child, who approaches another child who is about to go down a slide, joins in the activity by wrapping his or her legs around the first child from the back making like a train as they slide down together, is initiating physical contact (Modified from Wasson, 1980). Touching another child in the form of leaning against, holding hands, or hugging are also examples.

Group Activity

A child spontaneously plays in a group activity. This is characterized by approaching a group of children (i.e., three or more) and attempting to become involved in the activity in progress. This type of social interaction may also include a child already involved in a group activity when observed. Hence, the child is a definite part of the activity as he or she plays not only beside other children (i.e., parallel play) but with these children.

Verbal Social Interaction

Any interactive behavior which involves unstructured verbal communication. A child verbally responding to a child's initiation or verbally initiating to other children by calling them by their names (e.g., Hi Charlie! Come here, Eric!) are examples of positive verbal interaction. This category will also include any reciprocal conversations lasting for the duration of the time sample (i.e., 10 seconds). Verbal noise, such as imitating the sounds of a car engine, is considered verbal interaction if it is directed to a peer in the context of a game.

Negative Physical Contact

Direct physical contact with another child involving hitting, biting, kicking, tripping, pulling hair, and the like. Restraining another child's play behavior by physically interfering is considered negative physical contact. This obstruction can involve removing the play object being used (e.g., a ball) or refusing to share or take turns on the playground equipment. Refusing to get off of a swing in order to give another child the opportunity to play on it is an example. Furthermore, pulling a child away from an activity or sitting on the child without compliance are added examples. Using an object to indirectly hit another child with intent to hurt is also considered negative physical contact. For example, one child approaching another with a bat raised above his or her head is expressing negative social interaction. Hence, gestures with intent to harm are considered as negative physical contact (modified from Wasson, 1980).

Negative Verbal Interaction

The use of a negative or inappropriate verbal response or initiation. Calling a child derogatory names such as "stupid" or making such direct statements as "Get away", "You bug me", and "I don't like you" are considered negative verbal contact. In addition, a child who is crying is also considered as displaying negative verbal interaction.

Note

A child's response to nonverbal and verbal social interactions of other children is included within each behavioral category. The child who accepts the initiations of other children is reacting positively. For example, a child who is about to jump down from a play equipment, is approached by another child who takes hold of his or her hand so as to jump down together, continues to jump down is complying with the activity.